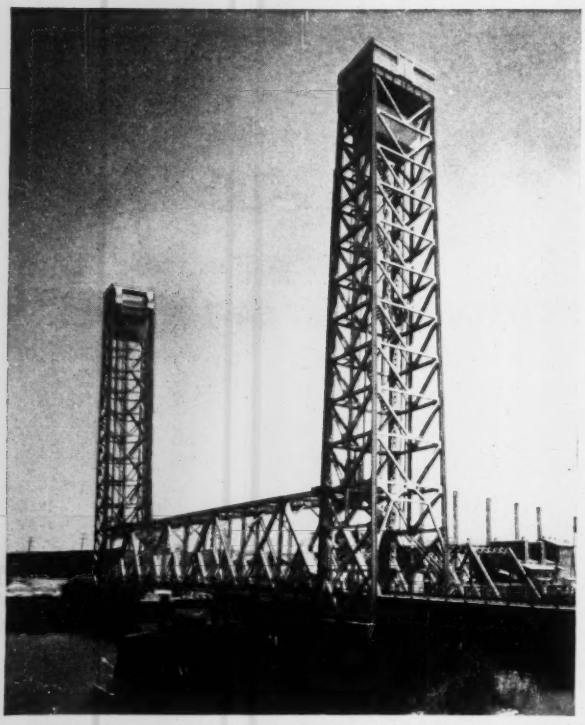
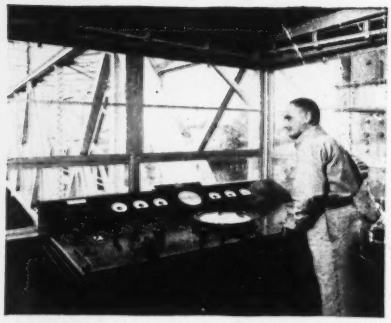
ENGINEERING NEWS-RECORD

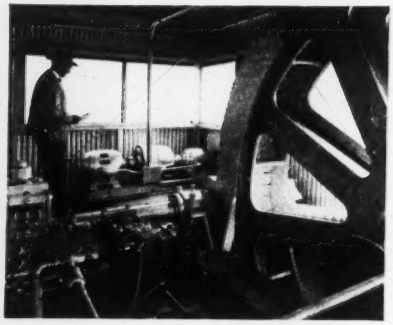
A McGRAW HILL PUBLICATION



AMPLIDYNE CONTROL—first applied to movable bridges by G.E.—permits raising and lowering Oakland's new Fruitvale bridge in a shorter time than by any other method. Amplidyne control responds instantly, provides faster acceleration and deceleration.



BRIDGE OPERATION is centered in operator's console. Amplidyne's closer control keeps ends of span aligned during operation, "seats" bridge accurately and smoothly.



REDUCED STRESS ON BRIDGE structure and machinery results from torque limiting, inherent in amplidyne control. Photo shows part of G-E drive equipment in east tower.

Smooth, pinpoint control speeds bridge operation

G-E amplidyne-controlled drive prevents skewing, seats span faster, protects structure from shocks

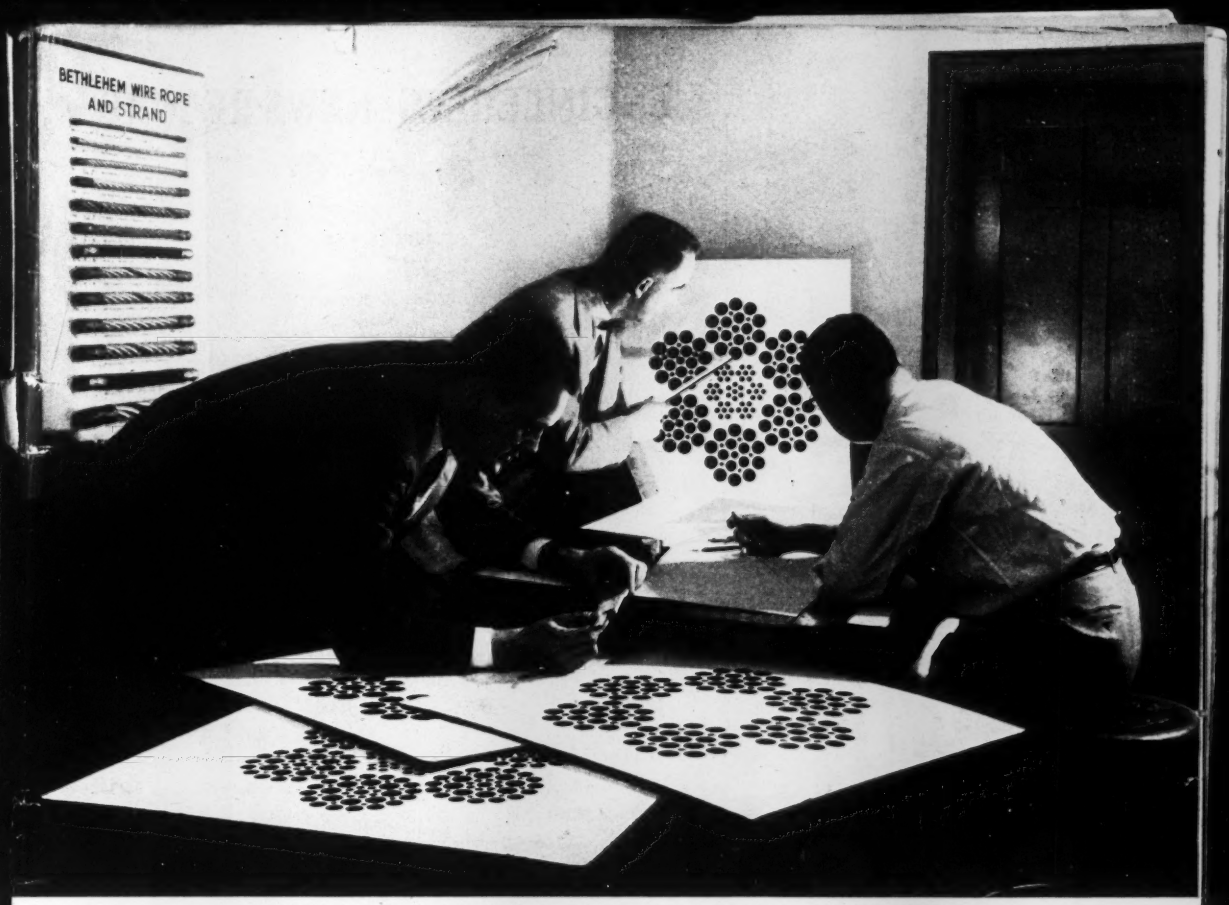
Key to precise control, faster operation, and better equipment protection of Oakland's new Fruitvale Avenue Lift Bridge is its General Electric amplidyne-controlled drive system. Working closely with Woodruff & Sampson, consulting engineers for the Corps of Engineers, Judson Pacific–Murphy Corp., general contractors, and Enterprise Electric Works, electrical contractors, G.E. has again engineered the versatile amplidyne into an outstanding movable-bridge system.

This is but one example of the help G-E engineers can provide *your* engineers or consultants on installed equipment for heavy construction projects. Contact your G-E Apparatus Sales Office. General Electric Company, Schenectady 5, N. Y. 664-23

WORLD'S FIRST amplidyne-controlled lift bridge—pioneered by G.E. is Stickel Memorial Bridge in New Jersey. Consulting engineers were Hardesty & Hanover.

Engineered Electrical Systems For Heavy Construction

GENERAL ELECTRIC



Much of the durability of Bethlehem wire rope can be traced back to the engineer and the drawing-board.

So that your Wire Rope will serve you well

These engineers are engaged in a typical discussion of the product they live with—Bethlehem wire rope. They know the tremendous importance of good design, good engineering . . . and they will spend many hours, sometimes days, over a seemingly small point that they feel will improve the quality of Bethlehem rope.

The making of wire rope is more than a matter of drawing wire and laying wires and strands into intricate patterns. Wire rope starts in the minds of engineers, and at Bethlehem these minds are busy ones.

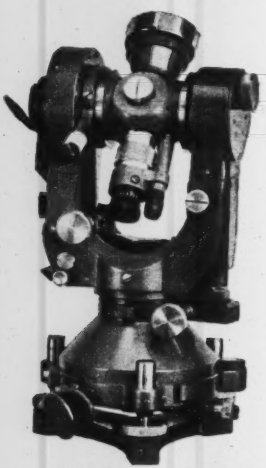
When you rig with Bethlehem rope, you can be sure that the rope has been well designed, well engineered . . . and that every subsequent step has received the same degree of care.

This care pays off on the job, where Bethlehem rope will serve you well. You can depend upon every foot, every inch of it, no matter how tough the going.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

When you think WIRE ROPE . . . think BETHLEHEM



T2... UNIVERSAL THEODOLITE

The recognized instrument for triangulation, bridgework and other precise engineering jobs...The instrument for you.

You read both circles by microscope direct to 1". Every reading gives the mean of two diametrically opposite points of the circle, therefore free from eccentricity-errors.

Due to the optical plummet, centering above a ground point is easily and quickly done even on windy days. The telescope, with a big field of view, is easy on the eye and can be transited both ways...Choose Wild instruments for ease of operation, speed and accuracy.

For detailed information ask for Booklet EN-612

HENRY WILD
SURVEYING INSTRUMENT SUPPLY CO.
OF AMERICA, INC.
25 COURT ST. BROOKLYN 2, N. Y. TRiangle 5-5044

ENGINEERING NEWS-RECORD

ABP Member ABC

Volume 148 JUNE 12, 1952 No. 24

WALDO G. BOWMAN
Editor

FEATURES IN THIS ISSUE

Morganza: A $20 million flood gate 34
New fluoride removal method cuts costs 40
Three cofferdams for every pier 43
Trouble on Moriches Bay 47
Heat-resistant concrete for jet-engine test cells 48

DEPARTMENTS

Reader Comment	14	Meetings	89
Construction Week	17	Research	90
Construction Trends	19	Obituaries	97
News of the Week	21	Legal	98
Labor	31	Business and Finance	116
Municipal	51	Unit Prices	124
International	66	Construction Reports	125
Men and Jobs	76	New Products	139

Editorials 144

Number of copies of this issue printed, 53,452

Managing Editor—Eugene E. Halmos, Jr.

Associate Editors—*New York*, V. T. Boughton, (senior associate), J. M. Connolly, R. H. Dodds, F. S. Merritt, Arthur J. Fox, Jr., Ken Maxey; *Chicago*, J. R. Carr; *San Francisco*, L. L. Wise; *Washington*, V. B. Smith.

Assistant Editors—*New York*, Clyde Henning; T. D. MacGregor, Abner A. Layne.

Staff Assistants—Robin Bragg, *Research;* Ethel Lyon, *Makeup;* Leo Tarpey, *Printing;* Henry G. Compton, Madalene Smith, Edward McLain, *Editorial.*

Business News—Elsie Eaves, *Manager;* J. A. Mahoney, M. Wetzel, *Reports;* J. H. Webber, M. W. Roessler, E. M. Huber, *Statistics;* C. R. Miner, *Research.*

Contributing Editor—N. A. Bowers.

Domestic News Bureaus—Atlanta, Chicago, Cleveland, Detroit, Houston, Los Angeles, San Francisco, Washington. Correspondents in 71 cities in the United States, Canada and Mexico.

Foreign News Bureaus—London, Frankfurt, Paris, Moscow, Tokyo, Bombay, Melbourne, Rio de Janeiro, Mexico City. *Correspondents*—Athens, Rome, Caracas, Buenos Aires, Santiago, Shanghai, Zurich, Johannesburg and 40 other cities.

ROBERT F. BOGER
Publisher

June 12, 1952 ENGINEERING NEWS-RECORD Vol. 148—No. 24
Member ABC and ABP

Published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. **Publication Office, 99-129 North Broadway, Albany 1, N. Y.**

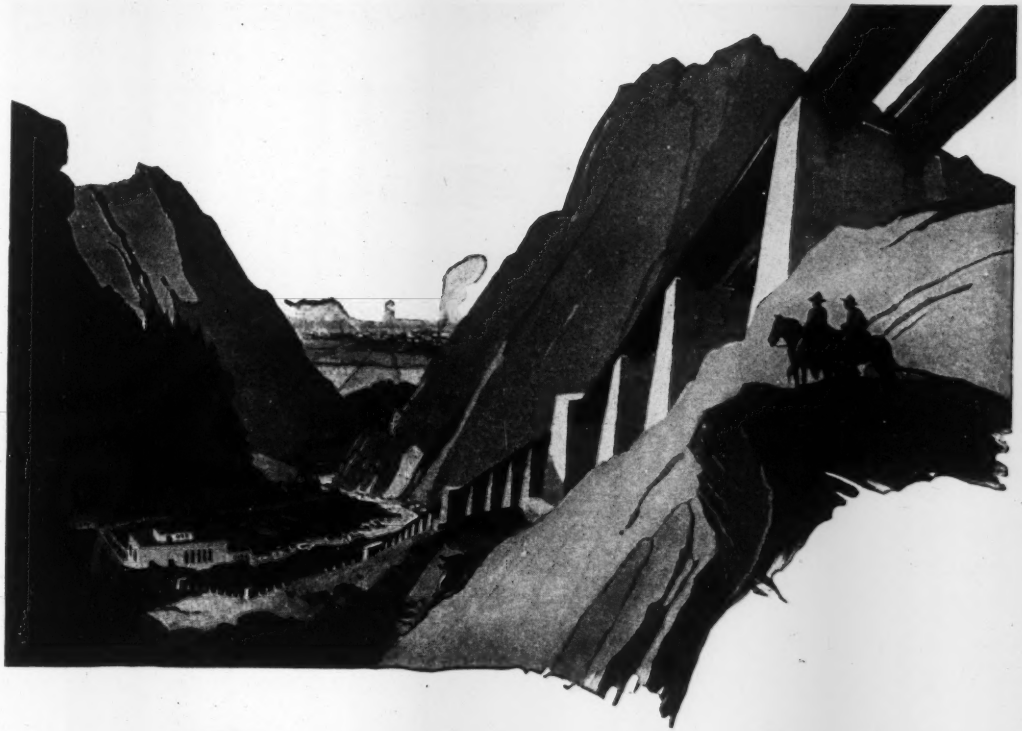
Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Engineering News-Record—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow ten days for change of address.

Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. Position and company connection must be indicated on subscription orders.

Single copies 35¢. Subscription rates—United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada, $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere countries, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries, $20.00 a year; $30.00 for two years; $40.00 for three years. Entered as second class matter October 29, 1936, at the Post Office at Albany, N. Y., under Act of Mar. 3, 1879. Printed in U. S. A.

Copyright 1952 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.



SMITH Impulse Turbines

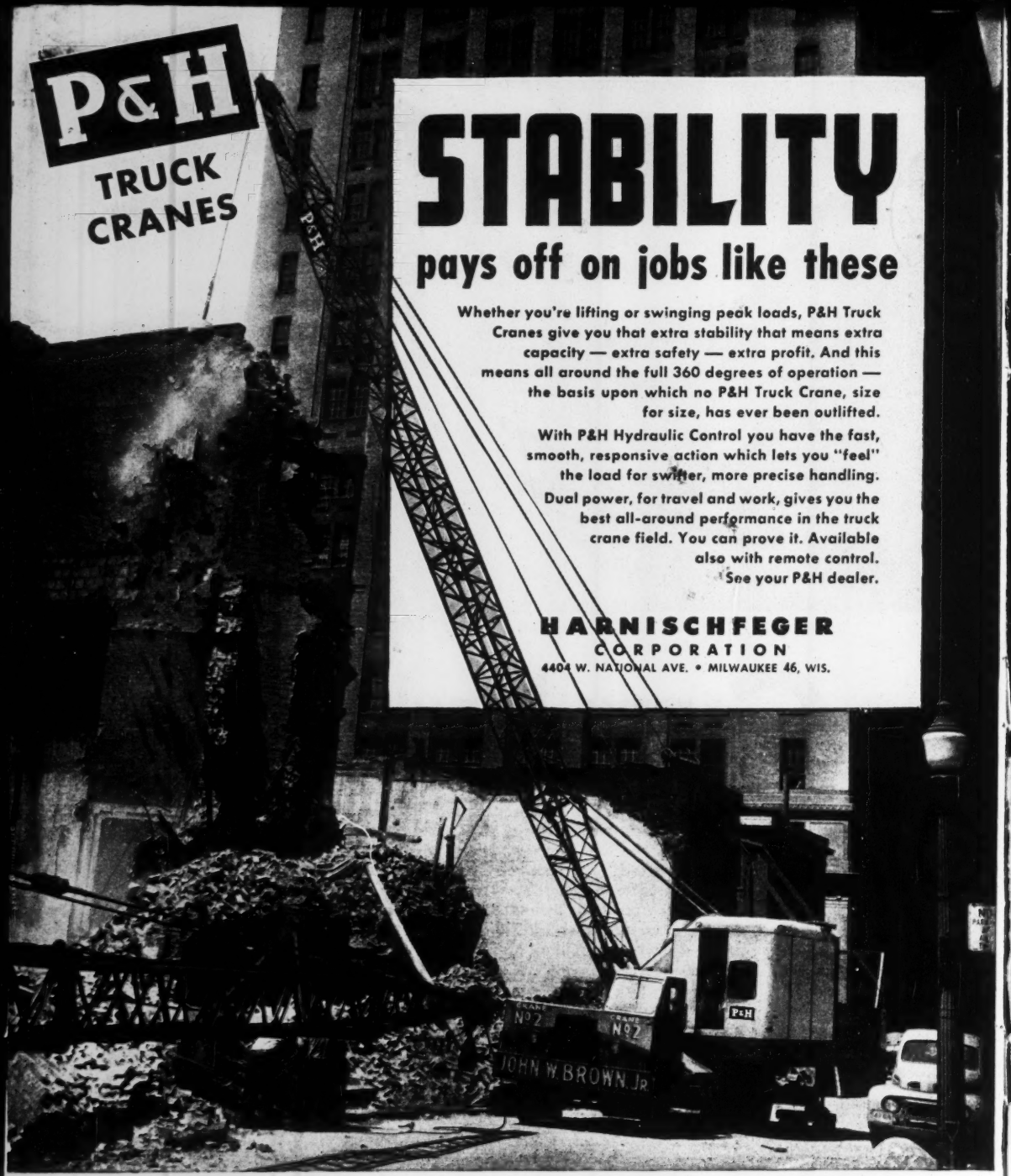
FOR HIGH HEADS, and wherever the head and water quantities available prohibit the use of reaction-type machines. Ideal for installations in remote localities because of the ease with which the completed unit may be transported. The simplicity of design, facility of operation and greater dependability remove the necessity of skilled operators and attendants. Smith's solid-cast runner design provides the additional advantages of closer spacing of buckets resulting in increased speed and consequently, a decrease in the size of the turbine unit, as well as the generator. Write for your copy of our Bulletin — "Impulse Turbines by SMITH!"

Impulse runner of *solid-cast* design, an exclusive SMITH advantage.

S. MORGAN SMITH COMPANY

YORK, PENNSYLVANIA

POWER *by* SMITH



P&H
TRUCK CRANES

STABILITY
pays off on jobs like these

Whether you're lifting or swinging peak loads, P&H Truck Cranes give you that extra stability that means extra capacity — extra safety — extra profit. And this means all around the full 360 degrees of operation — the basis upon which no P&H Truck Crane, size for size, has ever been outlifted.

With P&H Hydraulic Control you have the fast, smooth, responsive action which lets you "feel" the load for swifter, more precise handling.

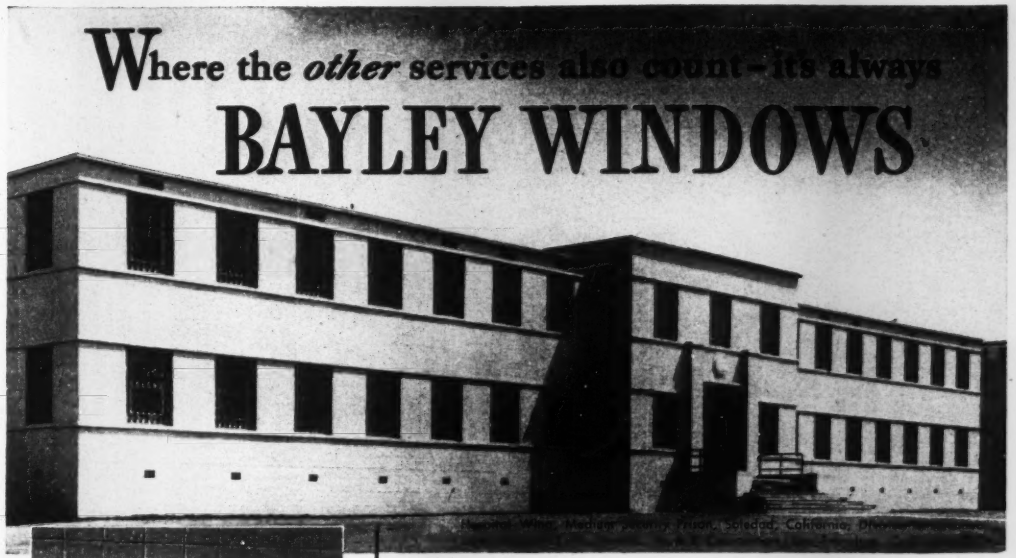
Dual power, for travel and work, gives you the best all-around performance in the truck crane field. You can prove it. Available also with remote control. See your P&H dealer.

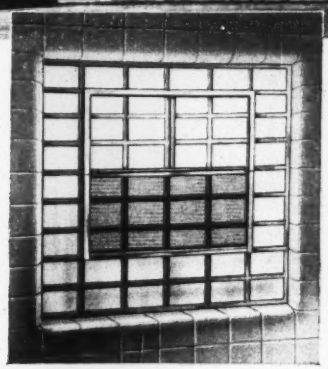
HARNISCHFEGER
CORPORATION
4404 W. NATIONAL AVE. • MILWAUKEE 46, WIS.

P&H Power Shovels and Truck Cranes are more easily converted for various types of service because hoist and digging drums are on one shaft. The need for auxiliary shafts and gearing is eliminated. Write for literature on the size you need. Sizes up to 8 cu. yds., gasoline, diesel or electric power.

POWER SHOVELS • CRAWLER AND TRUCK CRANES • OVERHEAD CRANES • HOISTS • ARC WELDERS AND ELECTRODES • SOIL STABILIZERS • DIESEL ENGINES • PRE-FABRICATED HOMES

Where the *other* services also count—it's always BAYLEY WINDOWS





Highlights of this New Exclusive BAYLEY Product

● Safeguards against escape ● Better daylighting ● Controlled ventilation ● Large areas of clear vision ● Minimizes self injury ● Working parts concealed ● Clear glass ● GLAZ-WEDG secures glass ● Sanitary—screens removable, easy to clean ● Glass washed from inside ● Noncorrosive metals throughout ● Reduces maintenance and interference with hospital routine

73 Years of RELIABILITY

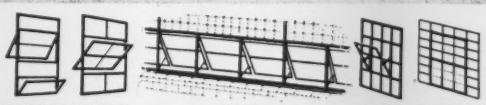
New Bayley SAF-T-GARD Window
Scientifically Developed for Mental Hospitals

To be known for a fine quality product is only the *first* essential. Much more is required from a truly satisfactory relationship. Full understanding of this fact is the foundation of Bayley's policy—and why Bayley has been so widely preferred for so many years by discriminating Building Designers.

Bayley's endeavor to better serve through all the building stages—from recognition of need to building occupancy—is further exemplified in the new Bayley Saf-T-Gard Window. This window is the result of Bayley's close collaboration with Doctors and officials of mental institutions. Not only does it efficiently meet the demands of modern mental hospitals but it also incorporates construction features made possible by Bayley's years of specialized window experience.

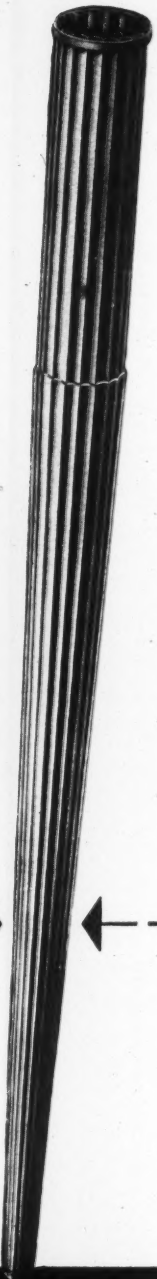
Regardless of window requirements, you too will find extra values *in discussing your needs with Bayley. Write or phone.*

See Bayley in Sweet's. Complete catalogs on Aluminum Windows, 17a/BA; Steel Windows, 17b/BAL; SAF-T-GARD Hospital Detention Window, 17b/BAY.



THE WILLIAM BAYLEY COMPANY
Springfield, Ohio
District Sales Offices:
Springfield, Ohio · Chicago 2 · New York 17 · Washington 16

ON and OFF the job fast!



...with cold-rolled MONOTUBE foundation piles

ENGINEERS and contractors find that tapered, fluted Monotubes provide maximum bearing strength and stability at minimum cost.

On the job pictured above, only 3 hours were required to set up equipment and start driving. Thirty-eight 40′ piles were driven in 2 days. This is a good example of how rugged, light weight Monotubes can be placed and driven *fast* with average mobile driving equipment.

Whatever your construction plans . . . buildings, bridges, piers, airports, highways . . . plan on Monotubes to save time and money! Write The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

Monotube Foundation Piles

Protection by TOUSEY!

THE exterior and interior surfaces of this giant crane are protected from the most rigorous abuse by a TOUSEY finish. ★ Close cooperation between the TOUSEY sales representative, the testing laboratory and manufacturing makes the formulation of such a finish a matter of routine. ★ Another item we have developed for 67 years at TOUSEY—offering needed service to customers —offering extra protection through constant quality control.

TOUSEY PRODUCTS

DURACOTE for DURABILITY

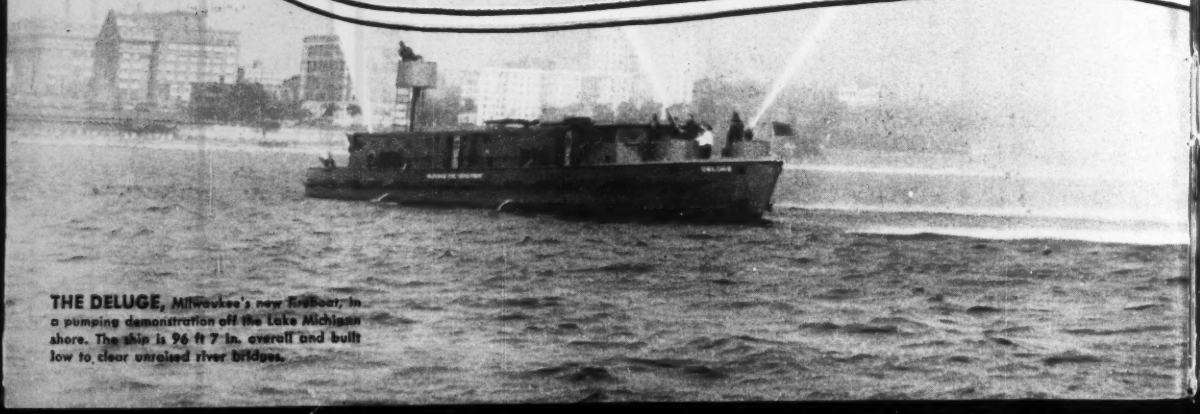
THE TOUSEY VARNISH COMPANY

330 West 42nd Street, New York 36, N. Y.

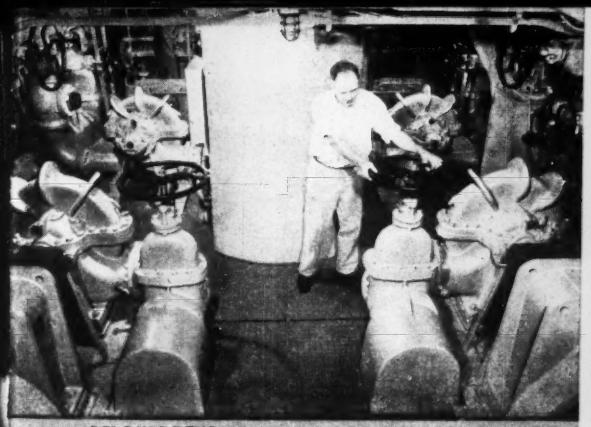
WATER

for Milwaukee's fire fighters!

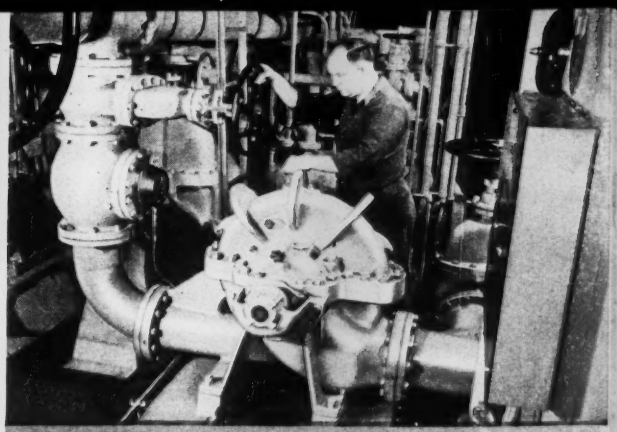
Allis-Chalmers Pumps Help Secure $900,000 Insurance Rate Slash



THE DELUGE, Milwaukee's new fireboat, in a pumping demonstration off the Lake Michigan shore. The ship is 96 ft 7 in. overall and built low to clear unraised river bridges.



BELOW DECKS, four Allis-Chalmers pumps supply the 4 water-throwing monitors and 14 three-inch discharge ports. Single stage construction reduces space and simplifies maintenance. Four Nordberg 375-hp, 600-rpm supercharged diesel engines supply power for propulsion and pumping.



MAIN PUMPS are each rated 3000 gpm at 150 psi, but have exceeded this by 11%. They are Type S, 10 by 8-in., bronze fitted, double suction centrifugal pumps. In 1951 the *Deluge* responded to 49 alarms, spent 72 hr and 23 min on duty at alarms, and pumped 1,143,125 gallons of river water.

A $900,000 ANNUAL PREMIUM SAVING results from the recent reduction in Milwaukee fire insurance rates. One of the very few cities so benefited, Milwaukee can be proud of the trained personnel and complete equipment in its excellent fire department.

Over 90% of the city's municipal pumps are Allis-Chalmers. And A-C pumps are used exclusively on the new fireboat *Deluge* — an important factor in Milwaukee's Class I Fire Department rating and Class II Fire Insurance rating. No city ranks higher, and few as high, in these ratings by the National Board of Fire Underwriters.

The *Deluge* — with a rated capacity of 12,000 gpm and proven capability of 13,835 gpm — is the largest capacity fireboat west of New York City. A fresh water dreadnaught with reinforced welded steel hull, it doubles as an icebreaker in keeping the Milwaukee, Menomonee, Kinnickinnic rivers and Burnham canal navigable. And, in addition to fighting fires, its pumps have proven valuable in aiding snow disposal in the rivers.

The *Deluge's* first "work call" was to fight from its decks a waterfront fire in a waste paper warehouse. More often it works as a floating booster station, pumping river water into a dry pipeline network in the commercial area. This separate system is put into action at conflagrations to supplement the city water supply.

When *your city* plans expansion or modernization, do as Milwaukee and other leading cities are doing — take advantage of Allis-Chalmers experience in municipal pumping equipment. For detailed information just mail the coupon at right or call your nearest Allis-Chalmers office.

SEND COUPON TODAY!

ALLIS-CHALMERS
Milwaukee 1, Wisconsin

Please send me the bulletins checked below:

- ☐ 08B6336A, Centrifugal Fire Pumps
- ☐ 08B6146A, Type S Centrifugal Pumps
- ☐ 52B6059H, Pumps for Every Industry
- ☐ 08X6256A, Handbook for Care of Centrifugal Pumps

Name .....

Company .....

Street .....

City ..... State .....

A-3739

ALLIS-CHALMERS

Builders of the World's Widest Range of Public Works Equipment

A-C ALLIS-CHALMERS

GENERALS

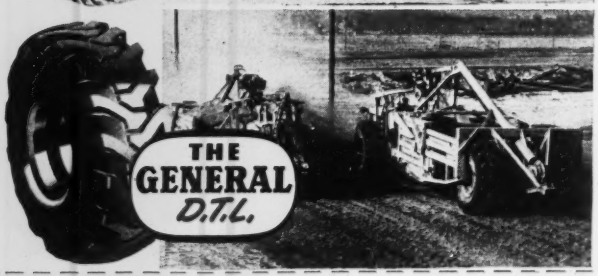
do any job, anywhere — FASTER! EASIER! AT LOWER COST!

GENERAL L. C. M.

For most work off the road, some on. Broad, deep lugs and thick, rugged shoulders prevent cuts, snags, bruises. More rayon cords, more rubber for extra carcass strength.

GENERAL H. C. T.

Designed for most work on the road, some off. Long-wearing safety tread and reinforced shoulder cleats give more traction, more original and recap miles.



GENERAL DUAL TRACTION LUG

To move more yards of dirt, the General Dual Traction Lug digs deep for more traction in soft going, forward or backward. Makes heavy jobs easy.

Make Every Worn Tire Work Longer for More Profit!

Your General Tire Dealer will KRAFT SYSTEM RECAP Worn Tires with the New General Truck Tire Tread of Your Choice

KRAFT SYSTEM RECAPPING
A GENERAL TIRE SERVICE

You're throwing away money when you throw away worn tires or accept an ordinary "adjustment" for them. Let your General Tire Dealer—a tire expert—restore worn tires with famous factory controlled Kraft System Recapping. You choose from the complete line of on and off-the-road new General Tire treads and he'll put that tread on your worn tire. He can do sectional repairs too. Get Kraft System Recapping—get more profit from every tire.

SPECIFY GENERAL TIRES ON YOUR NEW EQUIPMENT

Keep Maintenance Costs Down!

Go Modern with

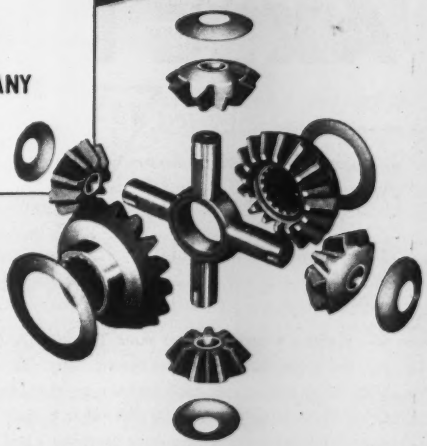
TIMKEN Detroit AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY

DETROIT 32, MICHIGAN

The Accepted D A CO Standard

TRADE MARK REGISTERED



Here's One More Reason Why!

New extra-strong differential

The trucks you buy are only as rugged as the axles! That's why you'll find it pays—in terms of better performance at less maintenance—to specify Timken-Detroit "3 for 1" Axles on all new trucks you buy.

Timken-Detroit has put *extra* strength right where it's needed—in the differential, the heart of every final drive. The gears have a 9-16 tooth combination—9 teeth in the pinions and 16 in the side gears—providing larger-diameter, stronger pinions. This gives added strength to the teeth in both the pinions and side gears. What's more, pinions have longer hubs, giving increased bearing area on the spider. Bronze bushings are used in pinions for longer wear, and larger-diameter trunnions are provided with coined flats for improved lubrication. All thrust washers are of hardened steel.

So remember! When you need trucks that are built to *take it*—make sure you buy trucks equipped with Timken-Detroit Axles and Brakes!

WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSES AND TRAILERS

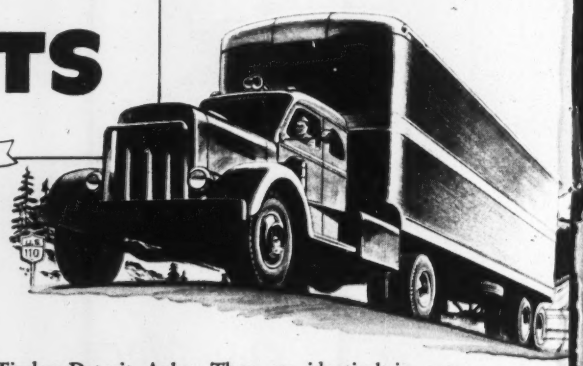
PLANTS AT: Detroit and Jackson, Mich. • Oshkosh, Wis. • Utica, N.Y. • Ashtabula, Kenton and Newark, Ohio • New Castle, Pa.

BEST to begin with!
BEST to replace with!

Genuine
TIMKEN
Detroit
AXLE PARTS

The Accepted D A Standard
TRADE MARK CO REGISTERED

LOOK FOR THIS SIGN!



When you replace worn parts on your Timken-Detroit Axles, you do it primarily for *one* reason only! To add *extra* miles of trouble-free performance to the life of your trucks. Make sure you get the *full* value from your maintenance dollar by installing only genuine Timken-Detroit Axle replacement parts.

These factory-built parts are made specifically for your Timken-Detroit Axles. They are identical in every respect to the originals. As a result, labor and adjustment costs are kept to a minimum—performance and dependability at a maximum. Even more important, because many of these parts are "kit-packed," you can do a complete factory-type job. All the essential related parts are there—nothing missing, nothing extra.

Don't take chances on inferior performance by substituting inferior parts! Always look for the sign that reads "Genuine Timken-Detroit Axle Parts" whenever your Timken-Detroit-equipped trucks need new axle parts.

MAIL THIS COUPON FOR FREE ILLUSTRATED LITERATURE

The Timken-Detroit Axle Company
100 Clark Street, Detroit 32, Michigan

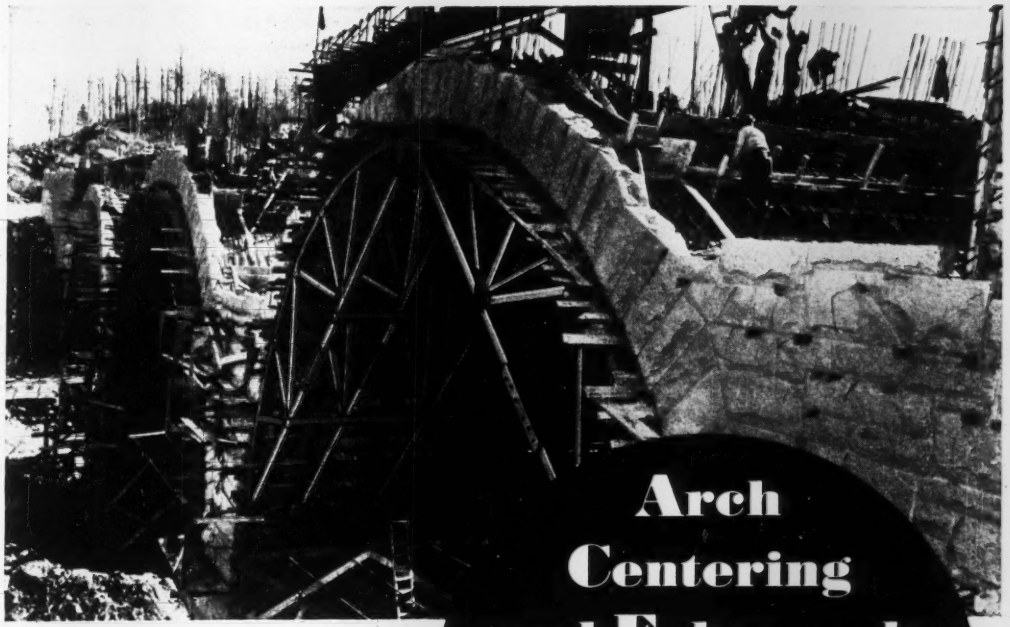
Gentlemen: Please send me free literature on Timken-Detroit Axle Parts for "3 for 1" Axles.

NAME_____

ADDRESS_____

CITY_____ STATE_____

I operate_____ (number of trucks.)



Arch Centering and Falsework

Bar Harbor triple arch bridge on Paradise Hill Road on the coast of Maine. Length 273 feet plus approaches; roadway width 24 feet, with 3-foot sidewalk on both sides. Design by Bureau of Public Roads.

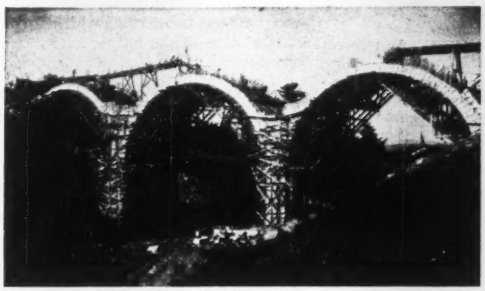
precision fabricated to save time and cut costs

The husky timber trusses which form the arch centering for this bridge eliminate a forest of conventional shoring timbers. Prefabricated to engineering detail by Timber Structures, Inc., trusses were shipped knocked down and assembled at the jobsite. Typical of results achieved through such prefabrication, the contractor profited through

Complete accuracy for precision construction.
Overall saving in time and cost.

As a pioneer in the sciences of timber fabrication and lamination, Timber Structures, Inc. has the experience and facilities to meet your most exacting requirements for both pour-and-move formwork and for non-repetitive service. Engineering assistance is available in whatever degree you may desire.

Your inquiries about falsework and other products of engineered timbers are welcome. See your nearest Timber Structures office, or send us the coupon for booklet, "Engineered Timber Construction" which gives detailed information about our facilities and products.



TIMBER STRUCTURES, INC.

P. O. Box 3782-C, Portland 8, Oregon

Offices in New York, Chicago, Detroit,
Kansas City, Dallas, Seattle and Spokane

TIMBER STRUCTURES, INC. OF CALIFORNIA • Oakland, California
TIMBER STRUCTURES OF CANADA, LTD. • Peterborough, Ontario

Representatives throughout the United States and Canada

TIMBER STRUCTURES, INC.
P. O. Box 3782-C, Portland 8, Oregon
Please send literature on prefabricated falsework and booklet, "Engineered Timber Construction".

Name_____

Company_____ Position_____

Address_____ Zone_____

City_____ State_____

Queen City Concrete Pipe Corp., Cincinnati, finds low-cost way of hauling BIG pipe

Sometimes a new machine makes possible a new cost-cutting method of doing a job for a real money-making combination. That's how rubber-tired Tournacrane paid off for Queen City Concrete Pipe Corp. of Cincinnati.

Manufacturing large concrete pipe at plant, then shipping to location is expensive, especially since sizes prevent efficient use of flat-car space and pipe breakage in multiple handling is high.

Queen City licked this problem by using Tournacrane with their unique pipe making method. This secured them sub-contract to supply Ryan Const. Co. with all pipe on a $4,813,000 6-mi. trunk sewer addition at Evansville, Ind.

Versatile, rubber-tired Tournacrane handled the entire operation of lifting and moving the 12.8 ton pipe to location 1.1 miles away. Moving, lifting and reaching was all controlled by one man from convenient dashboard electric switches.

In addition to its ability to lift and carry capacity loads anywhere, Tournacrane's exclusive 3-way crane action lets you lift, spot and place loads horizontally on a low boom . . . you can reach through windows, doorways, into boxcars, through hatches and other low clearance obstructions.

Exceptional mobility on low-pressure tires lets you make self-powered moves on the job or job-to-job over any surfaces: pavement or dirt roads . . . through traffic . . . under low wires . . . across curbs or rails . . . down tracks and over trestles . . . through mud, sand, snow, etc. This means you go anywhere at speeds to 35 m.p.h., without usual equipment loading or roading delays and costs.

Tournacranes are available in two sizes: 15-ton model "C" (standard boom lifts and reaches to 35') and the 7-ton model "D" (lifts 29'3", reaches 31'). If you have unusual and difficult lifts, see your LeTourneau Distributor for complete facts on this go-anywhere, reach-anywhere off-road crane.

R. G. LeTOURNEAU, INC.
Peoria, Illinois

READER COMMENT

Foreign aid

Sir: I was very pleased to read your factual and fair editorial, "Extravagant and Misleading," in the May 1 issue in which you straighten out the highly inaccurate and distorted statements by the United States Chamber of Commerce on the French Rhone River development project.

The Chamber of Commerce really went rather beyond the bounds of fair opposition in this attack, and it is comforting to see responsible organs such as yours refusing to permit such deliberate distortions to go unchallenged.

HARLAN CLEVELAND
Assistant Director for Europe
Mutual Security Agency
Washington, D. C.

Record, not design flood

Sir: In your article "A sequel: Philadelphia builds a flood chute", (ENR Apr. 10) you state the capacity of the flood channel is 6,500 cfs. Having been associated with this project during the report and design stages, I wish to point out that the design capacity adopted was 10,000 cfs; freeboard of varying amounts were added to the design water-surface depending on the type of flood protection: concrete wall, riprap slope or earth embankment. The discharge of 6,500 cfs is the maximum flood of record.

PHILLIP Z. KIRPICH
Knappen Tippetts Abbett Engineering Co.,
Athens, Greece

No interest in unity?

Sir: The lack of reader comment on the proposed "unity plan" (ENR Feb. 21, p 27) seems somewhat strange. Can it be that there is no interest outside of official circles of EJC, or is it professional engineers generally feel that Plan D is already, to all practical purposes, in effect? One thing is certain. It will be very hard to build up any enthusiasm for another venture in the federation type of organization among those of us who remember the story of the old American Engineering Council that was launched with such great fanfare of optimism only 34 short years ago.

It is also certain that the picture as presented in the report favoring Plan A is sadly out of focus for the following reasons.

(1) On account of multiple memberships, the total for the proposed EJC group is not over 100,000, probably considerably less, and only about half of them are engineers of profes-

sional standing. The writer is an active member of three of the proposed constituent societies, and many others hold from two to five memberships. The average is probably about 2.5 memberships per person.

(2) There are at least 500,000 persons in the United States eligible for membership in one or more of these organizations, so the membership is somewhat less than 20 percent of the potential. NSPE has 25,000 members. The number of eligibles is not exactly known on account of multiple licensures, but it is probably not much over 125,000, so again we have approximately 20 percent of potential.

(3) Most important of all: any organization that presumes to speak for the profession of engineering must be composed of professional engineers; must have a national membership, geographically distributed, including all branches of the profession, and organized on the local, state and national levels in compact, homogeneous groups capable of *prompt* and *effective* action on any and all occasions. There is today exactly one organization in existence that satisfies this simple specification: NSPE.

HAROLD H. MUNGER,
Manhattan, Kansas

Help on appeals

Sir: Of course, we note the frequent mention in NEWS-RECORD of the effort of the Associated General Contractors to obtain remedial legislation restoring to the contractors the right to appeal decisions of the contracting officer or department heads to the U. S. Court of Claims. In your current issue (March 13, p. 32) we also note that the American Society of Civil Engineers has joined the AGC in their effort.

Our association, through Kirlin, Campbell & Keating of Washington, is also doing what it can to help. Mr. Robert E. Kline, Jr., of the above firm, is representing us.

HARRY O. LOCHER
The National Association
River and Harbor Contractors
New York, N. Y.

Job openings

Sir: The Territory of Guam offers excellent opportunities for architects, engineers, contractors and surveyors. The Government has about $8 million of development in the planning stages and a significant amount of private construction is under way.

I should be glad to correspond with individuals or corporations about the opportunities in Guam.

J. R. PALOMO
Acting Governor of Guam

NEW smoothness... NEW efficiency in powder-actuated fastening...

Ramset JOBMASTER

ANOTHER RAMSET FIRST
Designed BY Operators FOR Operators

SEE THESE NEW FEATURES:

- 1-PIECE TOOL, *for faster loading*
- TRIGGER ACTION, *for easy operation*
- PORTED BARREL, *to reduce spall*
- ANGLE-FIRE CONTROL, *for straight penetration*
- VISI-CHEK BUTTON, *for quick inspection*
- *Plus exclusive, proved-in-use ROTO-SET SAFETY SHIELD, for accurate positioning*

Faster, lighter, easier handled, the new RAMSET JOBMASTER sets a record pace for steel and concrete fastenings. Properly trained workmen quickly become skilled operators because of smooth, simple, natural motions of loading, placing, firing. Positive controls bring improved accuracy and efficiency . . . and still lower fastening costs. Ask your dealer for demonstration of how RAMSET's years of pioneering have made the new JOBMASTER the proved-in-performance leader.

Ramset Fasteners, Inc.
12117 BEREA ROAD • CLEVELAND 11, OHIO

Product Patent No. 2470117. Other Patents Pending.

Ask for Demonstration TODAY!

"We didn't know a paver could be made this good!"

Says John B. Taylor, Paving Contractor, about the new Worthington Paver

"SELDOM DO WE ENDORSE ANY CONSTRUCTION EQUIPMENT" begins a letter from John B. Taylor, Taylor Brothers president, pictured here on the job, ". . . but after using the new 34E . . . we feel it our responsibility to write you."

According to its president, John B. Taylor, Taylor Brothers Company, Inc., paving contractors from Birmingham, Michigan, have found that the new Worthington Model WP paver will lay more highway faster and at lower cost than any paver his company knows of.

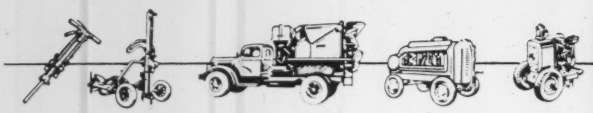
Says Mr. Taylor: "We thought we knew about your pavers' superiority after using them for 20 years, but this new 34E beats them all."

The Taylor Company has been using its Worthington Dual Drum Paver on a paving job near Dearborn.

The new Worthington paver is the practical result of forty years of experience in building pavers and other construction equipment. Learn how it can help speed *your* paving jobs by writing for Bulletin R-1700-B7 to *Worthington Corporation, formerly Worthington Pump and Machinery Corporation, Construction Equipment Division, Plainfield, New Jersey.*

NEW WORTHINGTON DUAL-DRUM PAVER at work for Taylor Brothers on a paving job near Dearborn, Michigan. Taylor's job reports indicate that the new paver, with its six-and-a-half-second skip, faster transfer and discharge automatic water control system, and hydraulically controlled bucket, is laying more highways and streets at less cost.

R-2.6



If It's A Construction Job, It's A *BLUE BRUTE* Job

WORTHINGTON

Construction Equipment

BACK TO THE COURTS—It's important to note the key words in the McCarran Bill concerning disputes over fact in government contracts, reported out to the Senate this week: Appeals can be made to the courts if a decision is considered to be "fraudulent or grossly erroneous."

To get that loophole into the record, the construction industry has carried on a seven-month battle, leveling its biggest guns at the Senate Judiciary Committee, to regain the right of appeal from decisions of government agency heads on contract questions. (You'll remember, the fight started with a Supreme Court decision in the now-famous Wunderlich Case in December that decisions couldn't be appealed unless fraud could be proved.)

Industry leaders think the fight nearly won: There doesn't seem to be significant opposition in either house. In fact, House leaders have been waiting for the Senate committee report as a model for their own.

CONFUSION—But clearing the dispute over contract appeals was one of the few clear-cut decisions to come out of a Congress trying to hurry (to get busy on politics). On housing, for instance, the House knocked down public housing starts to 5,000—the Senate (passing the Independent Offices Bill) upped the figure to 45,000. Neither figure was near the Administration's original 75,000-unit request, and observers doubted the final outcome would be even as high as the Senate figure.

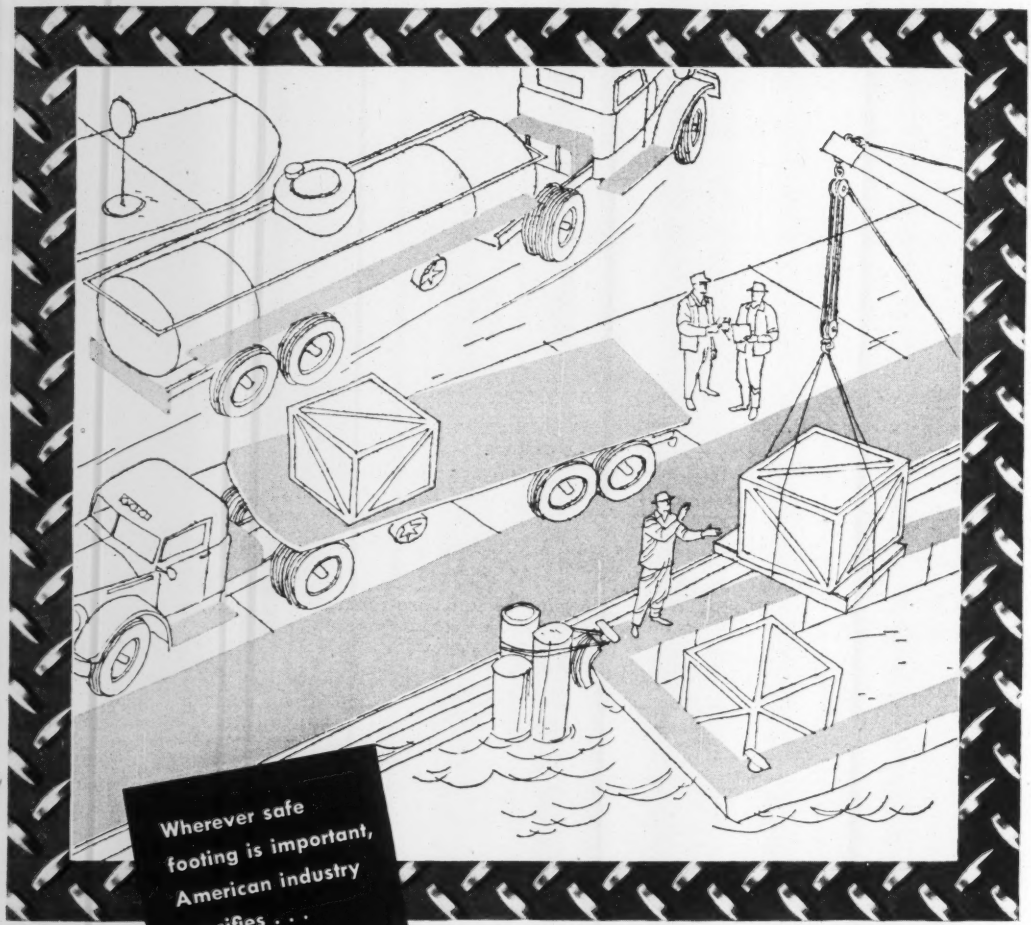
In a similar vein, the Senate restored two of the four cuts made by the House on steam plants for TVA—a $14-million item.

NEAT TRICK—And there was more than met the eye in a Senate action O.K.'ing a bill to exempt all engineers from wage controls—instead of only salaried engineers who work for professional firms.

That's a neat answer to this problem: As originally proposed, the measure would have reversed the positions of big industrial companies vs. consultants. It would have made it possible for consultants to hire men away from the big outfits (instead of the other way 'round), since their pay scales would be exempt from controls. The industrial concerns made their case strong—the answer gets everybody off the salary hook.

COURT BATTLE—Uncle Sam's effort to hold major streams for federal power development may be heading for another court fight, if the Grant County (Wash.) PUD proceeds with plans to build a $25-million hydro dam across the Columbia at Priest Rapids. Point is, Congress has already authorized Army Engineers to build a dam at that site, withholding money until completion of Chief Joseph Dam upstream. PUD has already started condemnation of lands at the site—now faces possible court action by the government to determine if it has the right to build.

IN THIS ISSUE—Bid shopping bill future (p. 21) . . . Can public housing be crammed down Los Angeles' throat? (p. 22) . . . Reg. X rules relaxed (p. 23) . . . Southwestern housing job wins NAHB award (p. 27) . . . Harlan County dam is $46-million faucet for Republican River (p. 28) . . . Operating engineers snarl Philadelphia construction (p. 30) . . . $20-million floodgate for Morganza (p. 34) . . . Develop heat resistant concrete (p. 48) . . . Miami votes $27-million sewer plan (p. 51) . . .U. S. firms build hydro dams (p. 66) . . . End controls, builders say, as sales fall (p. 116).



INLAND 4-WAY® SAFETY PLATE

Because ACCIDENTS are COSTLY, safe, sure footing pays off in higher production, better fire protection and lower insurance rates.

Men "on the move" appreciate the non-skid, slip-resistant qualities of Inland 4-Way Safety Plate. They work faster and more efficiently; morale is generally higher.

The long-lasting qualities of Inland 4-Way Safety Plate means lower maintenance and replacement costs —fewer repairs.

You'll be wise to use Inland 4-Way Safety Plate on all danger spots in your plant and as standard equipment for your products. It's a worthwhile investment any way you look at it.

Available from Leading Steel Jobbers

•

WRITE FOR BULLETIN F-1

INLAND STEEL COMPANY

38 SOUTH DEARBORN STREET • CHICAGO 3, ILLINOIS

SALES OFFICES: *Chicago • Davenport • Detroit • Indianapolis • Kansas City • Milwaukee • New York St. Louis • St. Paul*

PRODUCTS: *Sheets, Strip, Tin Mill Products, Bars, Plates, Structural Shapes, Sheet Piling, Reinforcing Bars, Pig Iron, Rails and Track Accessories*

INLAND

SOUTH, SOUTHWEST STILL GAIN IN INDUSTRIAL

Industry is still growing fastest in the South and West. The three ENR regions in those areas have been getting 56.7% of industrial building contracts since the Korean war started. Before World War II, they got only 35% of these contracts. Second long-run industrial growth trends favor these regions against older regions in the Northeast, East and Middle West. The older regions are still growing—but they are no longer growing, as a group, as fast as the rest of the country.

There are two marked exceptions to this trend, in the Far Western and Middle Western states. The Far West's share of industrial building had been dropping since Korea—when it should be rising, according to the trend and the Middle West has been rising when it should have been falling.

The defense program is behind these counter-trend movements. It stimulates industrial building heavily in the Middle West, where many of the steel mills, machine tool plants and other defense facilities are traditionally located. And defense has not been so kind to the West Coast as it was in World War II, when aircraft plants were built on a vast scale.

But, aside from these exceptions, the long-run trend has gone right on operating—as the table below shows in shares of the U. S. total.

ENR INDUSTRIAL BUILDING CONTRACTS

Region	1935-39	1946-49	Since Korea
New England	5.5%	4.2%	1.9%
Middle Atlantic	32.9%	17.5%	15.5%
Southern	13.6%	13.8%	21.1%
Middle West	26.6%	19.5%	25.9%
West of Mississippi	12.0%	25.6%	27.2%
Far West	9.4%	17.4%	8.3%

• **Effect of defense**—You might think that the defense effort speeded up this trend in industrial building—with the exceptions noted above. A lot of people thought it would—remember the howls of dismay when congressmen from Northeastern states thought Certificates of Necessity would be used to cause dispersal of industry to the South and West?

But it hasn't worked out that way. Government has actually encouraged companies to locate in the old regions. Again, there's an exception in Texas, which is getting more than 10% of all certificates issued. But, generally these certificates have been issued in such a way as to run counter to the long-run trend.

TRENDS IN INDUSTRIAL BUILDING (1)

Region	1935-39	1946-49	Certificates of Necessity (2)
New England	5.5%	4.2%	4.5%
Middle Atlantic	32.9%	17.5%	21.9%
Southern	13.6%	13.8%	13.7%
Middle West	26.6%	19.5%	26.4%
West of Mississippi	12.0%	17.4%	8.4%

(1) Shares of the U. S. total (2) As of March 15, 1952

• **The outlook**—The long-run trend in industrial location is still very strong—it has to be to overcome the opposite influence of the government's program of encouraging plant expansion. The figures show that the long-run influences causing the trend—availability of labor, growing local markets in the South and West, favorable location of natural resources—are still powerful.

All of this means that the post-defense market for other types of construction should be extra good in the South and West.

STERLING
gets the Action!

WITH THE SUPER TRACTION PLAN-A-POWER AXLE

RUGGED and ready for action . . . and STERLING gets it!

No bogging down because of poor traction. Wheel-spinning and slipping cut to a minimum because Sterling is engineered for more payload . . . more work . . . for more years. And built to your exact load and road conditions. Find out how Sterling costs less and earns more in your business.

Here's Why STERLING Gets More Work Done

- ✓ Husky planetary type rear axle. Gears have massive tooth construction and axle shafts are exceptionally large in diameter. Housing is triple alloy heat treated steel assuring maximum strength without excessive weight.
- ✓ Sturdy front axle with increased load capacity.
- ✓ Rear main and auxiliary springs cushion shock and strain, increase tire life, reduce driver fatigue.
- ✓ Power steering and shorter wheelbase provide better maneuverability, improve schedule time.
- ✓ Alloy steel heat treated frame with wood insert, plus bolted construction means longer frame life, economical maintenance.

Sterling White

STERLING DIVISION

The White Motor Company • Milwaukee 1, Wisconsin

The White Motor Company of Canada Limited . . . Montreal

See Your Nearest STERLING-WHITE Representative

H. E. FOREMAN, managing director of the Associated General Contractors, summarized general contractors objections.

H. C. TURNER JR., president of Turner Construction Co., opposed changes in present contract practice.

ELLIS FAGAN, president of Fagan Electric Co., emphasized need for federal bid-shopping rules.

Bid shopping bill future uncertain

General contractors and subcontractors are of two minds about the chances for passing Senator Kilgore's anti-bid shopping bill at this session of Congress. The generals feel that the bill has been slowed down to a point where it probably won't be reported this year.

Their forecast had the heaviest backing last weekend. But the specialty contractors were anything but downhearted. Instead, they were elated by the surprising support the bill had aroused in Congress, and they looked for fast action and possible enactment before the session ends.

These high hopes minimize some tough obstacles. After concluding subcommittee hearings last week, Chairman Kilgore kept the record open another seven days for filing of additional briefs. Even now with the record closed, several hurdles must be cleared before the bill can reach the Senate floor.

First of these is the subcommittee itself. Kilgore and other subcommittee members were plainly impressed by opposition testimony of witnesses representing the general contractors and government agencies. To keep the bill rolling, Kilgore's group would have to report the measure to the full Judiciary Committee headed by Senator McCarran. Newsmen doubted that the subcommittee would act before Congress leaves town for the two July conventions in Chicago.

• **Other obstacles**—Even if the subcommittee should o.k. the bill—possibly by a split vote—the measure would still have to win the approval of the full committee. Only then could there be a test of strength on the floor. Both the general and the specialty contractors agree that the bill would have its best chance at this session—in an election year. After all, the specialty contractors outnumber the generals by twenty to one.

Hopes of the subcontractors were buoyed up by the last day's hearings. The specialty men felt that their closing witnesses pretty well shot to pieces the arguments of the general contractors (ENR May 29, p. 21).

On their side, the generals couldn't see how the committee could ignore the objections of government agencies like the Army Engineers—speaking for Defense Dept. construction—and of the Public Building Service. The government, they felt, had strongly backed their own contentions.

• **Rebuttal**—Spokesmen for the subcontractors, shot holes in that assumption. They pointed out for one thing that the government witnesses had unwittingly been shadow boxing. The federal men aimed their heaviest fire at separation of contracts—a subject that bears no relation to the anti-bid shopping bill. This fallacy was well punctured in the rebuttals by subcontractors.

Only one contention of the general contractors had real validity, the specialty representatives admitted. Sub-bids from specialty contractors usually come in at the last minute, the generals told the committee, often by phone. As a result, the sub-bids usually are incomplete when the prime contractor enters his proposal ahead of the bid closing hour. For these reasons, the general contractors said, it would be impossible to file sub-bids along with the overall bid, as proposed in the bill.

Even this argument was turned against the opponents of the bill. Last-minute filing of sub-bids, the specialty men said, reflected the very fear of bid shopping that the Kilgore bill and eight companion bills in the House are designed to prevent. Subcontractors, they contended, submit their prices at the last minute in order to keep the general contractor from trying to beat down the figure by playing one sub-bidder against another.

If the Kilgore bill should be enacted (as improved in the House versions to meet minor objections), the subcontractors say they would no longer have any fears about filing their sub-bids early for federal contracts. They would then be ready and willing, they claimed, to give their prices to general contractors at any date the generals might set—a day or two days or a week before bids closed.

As evidence of their good faith, the subcontractors declare they haven't the slightest objection to a requirement by general contractors that sub-bidders post bid bonds. Rather, they wish the general contractors would require bid bonds from subcontractors.

THE WORD—Los Angeles' Mayor Fletcher Bowron (Second from left) gets a foretaste of public opinion as he emerged from one of the superheated televised hearings that preceded balloting on the city's controversial $110-million public housing project. At left is Attorney James L. Beebe, a leader of the anti-public housing forces.

LA downs public housing in "no-legal status" vote

Los Angeles voters have given an emphatic thumbs down to the city's $110-million federally financed public housing project. Given a chance to express themselves during state primary balloting, they cast 378,343 "No" votes against 258,718 "Yes" to start a new chapter in the bitterly fought battle over the 11-site, 10,000-unit program, on which $12-15 million has already been expended.

The voters by no means ended the battle, since the balloting was, in effect, only an opinion poll and had no legal standing.

As of now, the law is on the side of the pro-housers. The California State Supreme Court has ruled (and refused to review its findings) that the city must fulfill its contract with the City Housing Authority—invalidating a canceling resolution posed last December by the City Council. Mayor Fletcher Bowron, strongly in favor of the program, and CHA Director Howard L. Holzendorff have taken the position that, in view of the court action, there's only one thing to do—carry on the project.

• **Determined**—But the Council majority and the potent groups opposing the scheme are determined to end it, and they'll use the public's vote for all it's worth—which may legally be nothing, but politically is a great deal. The all-out, clamorous campaigns waged before the election were sufficient evidence of the importance which both sides have attached to it.

Before the primary balloting, the council asked the Public Housing Administration to agree to abide by the vote. Commissioner John Taylor Egan replied that: "We cannot 'order' the housing authority, which is not our agent but a separate public body with whom we have a binding contract, to abandon its program by its unilateral action—nor can we order the authority to 'abide by the results' on an issue which the Supreme Court of California has, in effect, held to have no legal effect.

The mayor himself, in a statement immediately after the results were in, committed himself to no definite action. He did have this to say, however —"It is a difficult situation for me. On the one hand, the requirement of the law which must be obeyed—on the other, the majority vote of the people which cannot be ignored."

The council was all for immediate dispatch, of two of its members plus City Attorney Ray L. Chesbro, to Washington to negotiate a termination. But Chesbro advised delay while his office considered the difficult legal complications.

Meanwhile, Chesbro's office is preparing an appeal to the U. S. Supreme Court for a writ of review. The state court has granted a delay in issuance of its writ of mandate until June 26.

• **Long fight**—The battle to scuttle the housing program has been going on just about since its inception, and swung into high gear last August when Congress passed Public Law 137. This amended the Independent Offices Appropriation Act to permit localities in certain instances to withdraw from such programs, providing they repay the federal government for funds expended.

Since early December of last year, the City Council has been fixed in a pattern of eight against the program and seven for. The majority contends—with the City Attorney's concurrence—that it was within its rights in canceling the contract with the housing authority, and that the State Supreme Court ignored Public Law 137 in denying the right.

Building groups have been in the forefront of the anti-public housing forces. Spearheading the opposition has been the Chamber of Commerce's Construction Industries Committee; the Building Contractors Association and the Home Builders Institute have both been highly active. (Associated General Contractors, however, has taken no public stand). Realty organizations, the Small Property Owners League, and numerous prominent individuals joined up with the opposition.

The pro-housing side includes labor organizations, some veterans groups, the Urban League, the League of Women Voters, prominent churchmen, other civic leaders, and the mayor.

• **Socialism**—The coordinating organization for the anti-housing forces calls itself the Committee Against Socialized Housing. The antis say housing should be built by private enterprise, not government, and contend that the low rents in a housing project amount to subsidizing a small group of people by the tax-paying majority. The pros reply that public housing comes under the same legislation that puts government into the private building field through federally insured mortgage loans, and no one objects to that.

• **False representation**—The eight anti-housing councilmen say that Mayor Bowron rushed the original agreement through the council as an emergency measure without giving the council time to consider and without giving full information on cost and plans. The mayor says the councilmen were given the full story.

Whatever the final outcome, most everyone is agreed that the sooner it comes, the better. Even with all activities on the project suspended, CHA says expenses are mounting at the rate of $200 daily for administration and interest on obligations.

Home down payments rule relaxed

The Federal Reserve Board acted this week to snap home sales out of the doldrums, substantially relaxing down payment requirements under Regulation X.

With home construction already swelling toward 1 million units for this year—a level topped only twice in the past—the easier terms are not expected to spur much building above that mark because of the shortage of mortgage money. The relaxation will also probably cause a significant shift to greater volume construction of homes in the $7,000-or-under group.

Because of uncertainties in the supplies of steel, the board did not change commercial building credit curbs in its revision. Lenders still can supply only 50% of the cost of a non-residential project.

For homebuilders the relaxation came none too soon. Sales are lagging sadly. (See p. 116). The National Association of Homebuilders has been pressing for months for complete elimination of Regulation X. The revision gives them larger concessions, but not enough, they say. The NAHB called changes in down payments for dwellings in the $8,000-to-$15,000-bracket, "very disappointing."

• General provisions—Buyers who use conventional loans to finance purchases of new single-family to four-family houses (started since Aug. 3, 1950), or FHA-insured mortgages to purchase either new or old houses, hereafter need pay down only 5% instead of 10% for homes costing up to $7,000 and 40% instead of 50% for houses costing $25,000 or more. In the intermediate price brackets, the new schedule increases gradually from the 5% minimum to the 40% maximum.

Veterans get more favorable terms, as required by the Defense Production Act. No down payment is required on veterans housing up to $7,000 but closing costs must be paid in cash. For a house costing $25,000 or more, financed with a VA-guaranteed mortgage, the down payment required is 35% instead of the previous 45%.

Down payment requirements for multi-unit housing likewise were lowered. They range now from 10% to 40% as compared with 17% to 50% under the former schedule.

No changes were made in mortgage amortization periods. The maximum period for paying off mortgages on houses costing under $12,000 remains 25 years, the maximum for higher-priced properties 20 years. Only exception to that permits veterans to have a longer period if the Veterans Administration finds that a shorter pay-off period would cause hardship.

Down payments required

Here are the new down payment rules for home sales under the Federal Reserve Board's ruling:

Value of house	For general public	Minimum for veterans
$5,000	$250	$0
6,000	300	0
7,000	350	0
8,000	950	350
9,000	1,200	480
10,000	1,450	580
11,000	1,900	740
12,000	2,350	900
13,000	2,800	1,450
14,000	3,250	2,000
15,000	3,700	2,250
16,000	4,250	3,100
17,000	4,800	3,670
18,000	5,350	4,240
19,000	5,900	4,810
20,000	6,450	5,380
21,000	7,000	5,950
22,000	7,750	6,650
23,000	8,500	7,350
24,000	9,250	8,050
25,000	10,000	8,750
Over 25,000	40%	35%

$1 billion expansion approved for industry

Approval of third-quarter allotments of controlled materials for 830 industrial expansion projects costing $1 billion was announced Wednesday, by the National Production Authority.

Of the 23 industrial expansion programs listed, chemicals has the largest dollar value with 165 at an estimated cost of $378 million. Iron and steel and allied products includes the greatest number of projects, 242, with an estimated cost of $245 million.

Each construction project—when first authorized—is given an allotment of material sufficient to complete the job, spread over the required number of calendar quarters.

Third-quarter allotments in all fields total 1,431 projects with an estimated cost of $6.5 billion. This total includes both new third-quarter starts and previously approved projects.

There remains a backlog of 128 new industrial expansion projects with an estimated cost of $395 million held over for approval later, when there is more material to allot. The second-quarter backlog comprised $1,253 industrial expansion projects with an estimated cost of $6 billion.

Similarly, the second-quarter backlog of commercial construction projects was 2,700 with an estimated cost of $1.2 billion cut down in the third quarter to 550 projects with an estimated cost of $237 million.

AEC expansion plans require power boost

Atomic Energy Commission's $4.2-billion expansion program, of which $3.3 billion has been requested, will require something in the neighborhood of an additional 4 million kw of electric power capacity.

This capacity would be added over the next four to five years to supply the means for production of fissionable material, and, to a much lesser extent, for turning these materials into atomic weapons.

Of the $4.2-billion expansion, AEC thus far has indicated specifically how it proposes to spend only $1 billion. This would be used for construction of a gaseous diffusion plant somewhere in the Ohio Valley. Approximately 1.8 million kw would be needed for this facility and AEC is now considering the offer of a group of electric companies to finance, construct and operate the power plant.

Although the remainder of the commission's planned expansion is still under wraps, informed sources say the major portion will be at two present AEC installations—Oak Ridge, Tenn., and Paducah, Ky.

Power for both these installations is now supplied partially by the Tennessee Valley Authority.

It is expected that planned expansion at Oak Ridge will increase electric power requirement by at least 750,000 kw, and planned expansion at Paducah will require added capacity of approximately 1.2 million kw.

Fast tax write-offs given for $170 million

Proposed industrial expansion projects totaling $169,686,866 were approved this week for fast tax amortization by the Defense Production Administration.

More than $85 million of it was concentrated in the four states of Louisiana, Texas, Arkansas and Oklahoma. Largest among the projects approved are expansion for: American Petro Chemical Corp at Lake Charles, La.—$26.6 million; Jefferson Chemical Co., Inc., Port Neches, Texas, $18.7 million.

CARLTON SPRINGER PROCTOR, President of ASCE, wants engineers "to come from behind their slide rules" in civic leadership. (ENR photos by Compton.)

"Engineers efforts bring progress . . ."

Proctor urges ASCE to lead fight against super-state

One highlight of the Centennial of Engineering sure to be long remembered, is the tireless exertion of Carlton Springer Proctor to make it have real impact on the pattern of thought in this country.

As President of the American Society of Civil Engineers, he has been traveling continually, without regard for personal or business convenience, visiting chapter meetings of the ASCE at luncheons and dinners, and attending regional and national gatherings. Next week (June 16-20), he will attend the Colorado Section conclave in Denver.

It has been a rigorous, time-consuming schedule that has carried him more than 12,000 miles so far this year—and according to present plans, will carry him another 6,000 before the Centennial observance this September in Chicago.

To all of these meetings he has carried one principal message: Engineers must pick up a standard and carry it high in the fight against encroaching statism.

The super-state is being created here—just as surely as it existed in the totalitarian countries in Europe, and just as surely as it exists in Russia today. The engineer, says Proctor, must draw on his professional prestige for clear-thinking and unbiased analysis, and lead in the fight against the trend.

• **Outlines problem**—He points out that the Centennial observance will serve to impress on the people of the country that "national progress has resulted from cooperation and integrated efforts of the engineer, management, risk capital and skilled workmen in an atmosphere of free competition—where opportunities for profit, coupled with a chance of loss, permit fair opportunity."

But engineers have done only half the job they should be doing, he says. In perfecting labor-saving devices, mechanization for rapidly increasing living standards, the facilities for mass entertainment and travel, we have largely ignored our responsibilities for the social impacts, the economic repercussions and the cultural implementations of our work . . . while the politicians have been quick to exploit our ineptitudes.

"To every engineer trained in the mental habit of direct analysis, it must be crystal clear that we are challenged by a world-wide politico-economic philosophy that is based on the vacuous soul-destroying promise of maximum return for minimum effort: the equivalent of pulling ourselves up by our boot straps," he says.

"Such a philosophy, preaching indolence, the socialized usurpation of private enterprise by the super-state, and the abolition of individual freedoms, leads to, and encourages, the loss of respect for creative effort and inventive intelligence; the concept that ideas are public-owned natural resources; acceptance by the public of the unethical and the expedient; and of a moral lassitude in high public office and in political life."

"The inevitable concomitant is, of course, the sacrifice of religion with the banishment of God from our daily life and work. Thus is bred the super-state with its managed economy, and its staggeringly top-heavy bureaucracy. This is the dead-end road that leads only to totalitarianism and communism."

Engineers can no longer hide behind their slide rules, he says. Theirs may well be the only leadership in which there is today sufficiently complete public confidence to guide men's minds back to the basic precepts of the dignity of hard work, the decency of public trust, and the religious principles on which the country was

"Socialism's philosophy destroys souls . . ."

"Begin uprooting corruption locally . . ."

"Be worthy of our engineering heritage . . ."

founded by our great forefathers.

"Herein lies the other half of our job, so long and so tragically neglected. . . . To accomplish this job we need to employ to the full the teamwork that is inherent to our organization and the full force of our influence."

The uprooting of corruption begins in the local precincts, he points out to ASCE chapters. With over 400,000 engineers in this country, we can be 400,000 constructors of civilization's future. Then we will be worthy of our heritage of one hundred years of engineering progress. Then our centennial celebration will more clearly show to millions that continued progress demands as a prerequisite the conservation of our free enterprise system and the reinvigoration of our faith in the dignity of man and his destiny in the eternal plan.

• **Has seen it work**—Proctor delivers his message with the deep conviction born of careful, penetrating, logical analysis of statism as he has seen it at close range in Russia, Germany and Japan.

He was in and out of Russia for five years, starting in 1929, on construction of a hydroelectric dam on the Svir River. At that time he already had considerable experience behind him. After graduating from Princeton University in 1915, he had gone with the firm of McKenzie, Voorhees & Gmelin, architects; and he had become superintendent of construction in the Washington Branch before World War I. During the war he served as a captain in the U. S. Army; then he became a partner in the firm of Moran & Proctor, consulting engineers (now Moran, Proctor, Meuser & Rutledge).

During his five years in Russia, he had first-hand experience with the Communist system in the early days of its formation. He saw its ruthless denial of human value, its exaltation of the state, and he began to analyze it.

One day he was informed that his firm had been selected to design the foundations for the palace of the Soviets—to be the most gigantic and magnificent engineering feat ever attempted. It was to be built on a 480-ft clear span, and topped by a statue of Lenin which would reach 120-ft higher than the Empire State Building.

Design of the foundations and construction supervision were both under Proctor's personal direction. In Moscow in 1935, he directed the soil laboratory tests; carefully examined the exploratory excavations at the site, and selected three Russian engineers to assist during development of foundation plans and specifications.

The work progressed efficiently, Proctor reports. The foundation installation for the heavy tower section was completed, and the structural steel work had reached an advanced stage when World War II broke. When Russia was invaded by the Nazis, this structure was dismantled so that the steel could be converted to use for armament.

"The Russians were so proud of this engineering achievement, that large-scale drawings of the foundation design and scale models constituted one of the most conspicuous and important exhibits in the Russian building at the New York World's Fair, 1939–40," Proctor relates.

• **Double talk**—Shortly after the war ended, the Soviet announced its decision to begin again on erection of the structural steel work. This decision was not popular with the peoples of war-devastated areas such as Stalingrad. And since its purpose was to improve public morale in an effort to overcome the all-pervading public inferiority complex, the project was abandoned.

"But of course, there could be no overt admission that the all-powerful Soviet, backed by its ruthless police control, could be influenced by public demand," Proctor recounts. "Therefore it was suddenly discovered that the foundations for this structure were inadequate. They even went so far as to discover that the foundation design had been intentionally drawn so that it would fail under the unprecedentedly high loads of the completed structure.

"From my quite intimate associations with the Russian people during this and other engineering undertakings there, I am convinced that most Russians, particularly the Russian engineers, recognized this story as completely unfounded propaganda," Proctor comments.

But guess who were taken in by it? The U. S. Naval Attache at the Moscow Embassy, denounced it as sabotage on his return to Washington; and General O'Daniel, who cited it in an article titled "Moscow Today" in the July, 1951 issue of Reader's Digest. Here is an example of Russian propaganda at work.

• **Other experiences**—But Proctor's experiences are not confined to Russia alone. During World War II, he was a colonel in the U. S. Army Corps of Engineers, commanding the 334th Special Service Regiment, and later commanding the Ahwaz District of the Persian Gulf Command. He received the Legion of Merit and the President's Certificate of Merit.

At war's end the Department of State and the War Department were prepared to reduce Germany and Japan to the status of agarian states. Engi-

Proctor urges leadership

neers rebelled: such a program would unbalance and upset the entire economics of Europe and the Far East.

The Engineers' Joint Council offered to make a survey which would produce a more feasible victory policy, and their offer was accepted. Proctor became chairman of the National Engineers Commission on Industrial Disarmament of Japan, and vice-chairman of the commission on Germany. For 20 months, he and the other engineers who volunteered their services, worked on their report. When completed it was accepted—and their work has provided some of the vital foundations for defense of the free world in Europe and Japan.

In both Germany and Japan, Proctor had the opportunity again, carefully to analyze the totalitarian state. It was a posthumous analysis, but the lessons were clearly written.

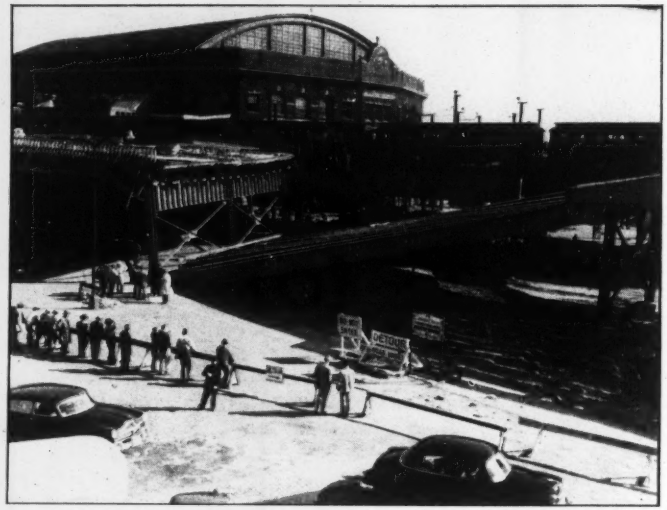
• **Engineering science**—During this long active career, Proctor has had time to make lasting contributions to engineering science. He collaborated with his partner David E. Moran in developing and patenting the deep open caissons for the Mississippi River Bridge at New Orleans, and the even deeper ones with domed tops for San Francisco's Oakland Bay Bridge.

He has also been an active alumnus of Princeton, serving as past president of the Princeton Engineering Assn., and of the Princeton Alumni Assn. of Southern New York. He is a member of the Princeton Graduate Council and of the Blind Brook Club.

On April 24, Proctor will set out on a tour that will take him through the Southwest, up along the West Coast, and back to Milwaukee, Wis., by the end of June. At one point in the tour, he will fly back to Philadelphia to be awarded his honorary Doctor of Engineering degree at Drexel Institute on June 14.

Then in Chicago during September—as President of America's oldest engineering society, the American Society of Civil Engineers—he will be a guiding force in the Centennial of Engineering celebration ceremonies. He will represent the ASCE, which has now grown to a total membership of 34,000.

In the Chicago convocation, the ASCE will not only participate in the general session, but will also hold its own extensive program of technical sessions, the most comprehensive in its experience. Success of the events has gone a long way toward assurance already, because of Proctor's persevering devotion to the goal of broader engineering leadership in keeping our system of free enterprise really free.



OFF ITS ROCKERS—Expansion end of span in overpass structure in Boston dropped into this position, without warning and from a cause as yet unexplained.

Cause of Boston span collapse sought

Four separate investigations of the cause of the collapse of a 96-ft span in the new Sullivan Square overpass in the Charlestown section of Boston are under way. No conclusions have been announced, but these facts have been reported:

The span is made up of 17 steel I-section stringers. The end of the span that dropped was mounted on expansion rockers and supported by a three-column steel bent. This bent was "free-standing" by virtue of the fact that the end of the adjacent 30-ft span, which it carried, was also mounted on rockers.

Concreting of the deck of this adjacent span had been under way for a week and had been completed on the day of the collapse.

The rockers were designed to stand approximately vertical under conditions of full dead load on the spans and at mean temperature, so that for erection purposes they were inclined away from one another and toward the centers of the spans. After the failure, the free-standing bent was found to be inclined away from the collapsed span, with two anchor bolts sheered off and two others bent.

In addition to an investigation by the Massachusetts Department of Public Works, owner of the structure, it is understood that the designers, Thomas Worcester & Co., Boston, the general contractor, M. DeMatteo Construction Co., Quincy, Mass., and the steel erection contractor, Lehigh Structural Steel Co., Allentown, Pa., have all engaged consultants to report to them on the cause of the failure.

Court order halts hearing in Fallbrook water case

The Navy Department's suit to obtain water rights on the Santa Margarita River which it claimed it purchased along with the Camp Pendleton Marine base near San Diego—the Circuit Court of Appeals in San Francisco last week issued an order that may halt or delay a "pre-trial" hearing.

The Appellate Court ordered two U. S. District Court judges to show cause why a writ of mandate should not be issued to halt a trial against the Fallbrook Public Utility District and the Santa Margarita Water Co.

Named were Presiding Judge Leon Yankwich in Los Angeles and District Judge Jacob Weinberger in San Diego. The latter made the ruling that allowed a suit to be filed separately against the two large water users, postponing suits against the other water users in the Fallbrook area.

This ruling was opposed by both defendants, who contended that they would have to bear an unfair amount of the legal cost in defending themselves and that the thousands of other co-defendants would be bound by the decision in this case, but would be deprived of appearing in court.

Weinberger maintained that the trial would not prejudice the cases of other defendants.

STREET SCENE in San Juan Park, Farmington, N. M., where the NAHB awarded the developers an Award of Merit.

NAHB gives prize to project

- **Planning and layout of site is weighted 70%**
- **Architectural design considered 30% of total**

The National Association of Home Builders last week awarded its first 1952 Merit Award in Land Planning to the San Juan Park project in Farmington, N. M.

The San Juan project is a 53-acre subdivision of 200 homes developed by Allen Stamm & Associates, of Santa Fe, N. M.

Farmington, site of the award winning project, is in the upper northwest corner of New Mexico, adjacent to the Arizona-Colorado border. It is a growing community where oil and gas development has made vast progress in recent years.

The NAHB's land planning committee was co-chairmanned by Albert Balch of Seattle, Wash., and L. E. Fite of San Antonio, Tex. In judging entries submitted in the award program, the committee gave weight of 70% to planning and layout features of the site, and 30% for the architectural design of buildings.

• **Site planning**—The committee found the following well-planned features incorporated in the land plan.

• Correct adaptation of streets to topography.

• The house lots were well related to the street grade.

• Good drainage achieved through the use of curvilinear streets adapted to land contours.

• Good relations of lot area and widths to type of homes.

• Utilities, such as light poles, placed along rear lot lines to improve street beauty.

• Seven-foot space between curb and sidewalk allowed for shade tree planting.

• A 3-acre park incorporated in the overall tract to add to the project's livability.

• **Architectural design**—The committee found the following architectural features which made the project worthy of the award.

• Simplicity of exterior design.

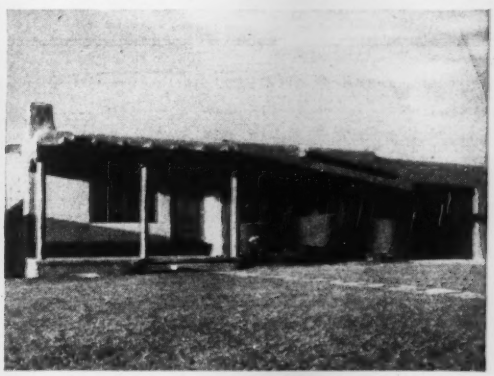
• Six variations in floor plans plus numerous variations in exterior treatment, thus avoiding "peas-in-a-pod" look.

• Ample storage areas (one of the committee's most important considerations).

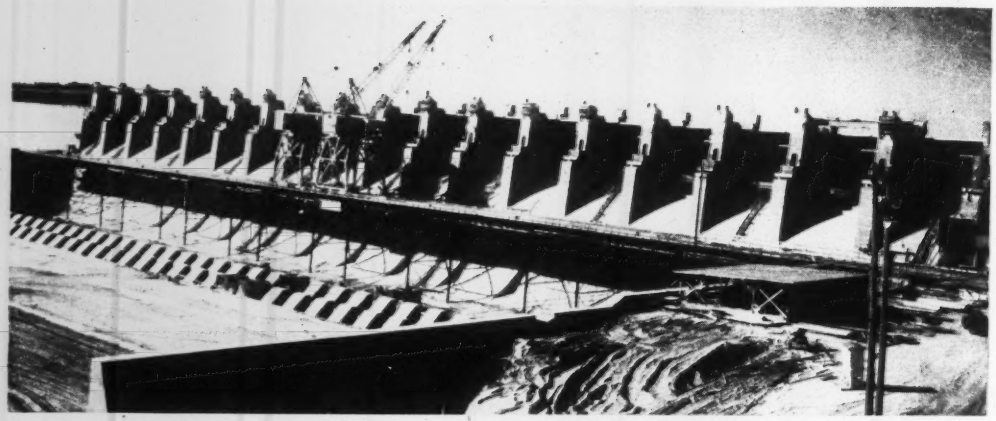
Another consideration to which the committee attached great importance was the provision in the project of both two- and three-bedroom designs. The committee said that this arrangement added to the stability of the subdivision.

Land planners for the project were Harmon & Donnell of Denver, Col.

BUILDING TEAM Frank Flanagan, purchasing agent; John Weaver Gordon II, architect, and Allen Stamm, builder.



SANTA FE STYLE architecture in the project. The NAHB weighted its findings 30% for architectural design.



CONCRETE PLACEMENT boomed during 1949-50. Revolving cranes, operating on 60-ft high by 1,350-ft long steel trestle, handled the 4-cu yd concrete buckets from flat-cars to spillway forms. (Corps of Engineers photos.)

Harlan County Dam takes on big job

It takes more to build a big multiple-purpose dam than meets the eye. Take Harlan County Dam, for instance, which was dedicated June 10.

To build this big Corps of Engineers structure, on the Republican River in south-central Nebraska, took a lot of money ($46 million); a lot of work (11 million man-hours on-site and 18 million man-hours off-site); a lot of time (6 years lacking just 3 days from ground-breaking to dedication); several contractors and a lot of materials.

Its primary purpose is flood protection of small communities and rich agricultural lands below the dam. For this, it will store 500,000 acre-ft of runoff from a 20,753-sq mi drainage area.

Since the Republican joins the Kansas (Kaw) River just above Manhattan, Kan., Harlan County Dam will help avert a repetition of the 1951 flood damages to that city, as well as Topeka and other Kansas cities along the Kaw (ENR Oct. 4, 1951, p. 30). It was no help, however, during last summer's floods, since closure was made just nine days after the Kaw crested at Kansas City.

In addition to providing 500,000 acre-ft of flood storage, Harlan County Dam will store 350,000 acre-ft for irrigation, sedimentation, recreation and conservation.

• **Annual benefits**—Army Engineers' estimates place the total annual benefits of the completed project at $2,380,000. Of this amount an average of $1.7 million will accrue annually from the prevention of flood damages. In the event of a single occurrence of the project design flood, the dam and reservoir will serve to prevent flood damages estimated at $12,320,000.

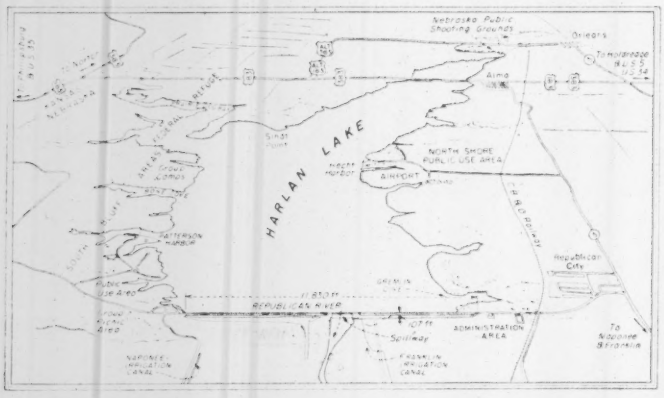
Annual benefits from irrigation operations are placed at $718,000. These are direct benefits. In addition, other beneficial uses include recreational activities along the shores of the 13,600-acre irrigation pool; public health improvement; fish and wildlife preservation; and improved water conditions below the dam.

• **Construction highlights**—Those who toiled through sub-zero winters and blistering summers on this 6-year project will remember many of the highlights of its construction. To name a few: Ground breaking ceremonies on June 13, 1946 . . . first concrete placed Nov. 1, 1948 . . . best day's earthmoving was 52,975 cu yd placed in the embankment on Oct. 20, 1948 . . . best day's concreting was 3,245 cu yd placed on Oct. 17, 1949 . . . and closure of the dam was made on July 22, 1951 at 5:00 pm.

Earthmoving hit a peak during August, September and October of 1948, and in July 1949. Over 1 million cu yd of embankment was placed during each of these four months.

• **Save $1 million**—The approved estimate of costs for the entire project was $47 million. The Army Engineers now estimate, however, that a saving of over $1 million will be effected by the time all construction is completed and final costs are totaled.

Not listed in the accompanying table of contracts, but included in the project cost are such items as highway relocations around the reservoir site ($2,137,000); relocation of Republi-



CONSTRUCTION . . . R. W. Atkinson, project manager and B. V. Reany, engineer.

SUPERVISION . . . by Col. L. J. Lincoln of the Kansas City District.

DESIGN . . . under L. G. Feil, chief of the engineering division.

can City (population 350) now situated in the reservoir area, and part of Alma, Neb. (population 1,700); acquisition of 31,500 acres, chiefly for the reservoir site; reservoir clearing; relocations of existing telephone, power and light, and gas lines in the area; and costs of design and field engineering.

Unlike the five multiple-purpose, main-stem dams on the Missouri River, Harlan County Dam will generate no hydro power. A bulkhead opening is provided to permit possible future power installation.

• **Supervision**—Harlan County Dam was built by the Kansas City District, Corps of Engineers, under the supervision of district engineers Col. L. J. Lincoln for the past two years, and Col. P. D. Berrigan, prior to that time. Louis G. Feil is chief of the engineering division, and Burney V. Reany is project engineer.

Robert Atkinson, partner in the Guy F. Atkinson Co., is project manager for the Harlan Construction Co.

PRINCIPAL FEATURES OF HARLAN COUNTY DAM

Dam (Rolled-fill embankment):

Length (including spillway)	11,828 ft
Height (above streambed)	107 ft

Spillway (Fixed-crest, gravity type):

Length	856 ft
Gates (Tainter)	Eighteen 40-30-ft

Conduits (Flood-control and irrigation):

Nine	5-8-ft
One	5-ft 6-in. ID
One	2-ft 10-in. ID

Reservoir (Capacity):

Flood control	500,000 acre-ft
Irrigation and conservation	350,000 acre-ft
Total	**850,000 acre-ft**

Major Quantities:

Rolled-fill embankment	13,400,000 cu yd
Excavation	16,000,000 cu yd
Reinforcing steel	4,700,000 lb
Structural steel (including Tainter gates)	2,800,000 lb
Concrete	430,000 cu yd
Riprap	245,000 cu yd

CONTRACTS AND CONTRACTORS AT HARLAN COUNTY DAM

Contract	Contractor	Amount	Construction Dates Awarded	Finished
Stage 1 Embankment	Mark C. Walker & Son	$1,500,000	June 1946	Oct. 1947
Construction Bridge	Francis R. Orshek	210,000	Jan. 1947	Oct. 1947
Temporary Residences, Office, Streets and Utilities	Martin K. Eby Construction Co.	445,000	Apr. 1947	Jan. 1948
Sluice Gate Assemblies	Hardie-Tynes Construction Co.	575,000	Oct. 1947	June 1949
Remaining Embankment, Spillway and Bulkheads	*Harlan Construction Co.	22,500,000	Feb. 1948	Jan. 1952
Office Building and 2 Residences (permanent)	B & G Construction Co.	————	Dec. 1948	Mar. 1950
Railroad Relocation	Missouri Valley Construction Co.	1,100,000	June 1948	Nov. 1949
Railroad Relocation	Morrison-Knudsen Co.	3,255,000	Mar. 1949	Apr. 1950
Irrigation Outlet Works	Claussen, Olsen & Benner, Inc.	225,000	————	Feb. 1953
Aggregates:				
(4 contracts):	L. G. Everist	290,000	July 1948	Completed
	Moore Sand Co. & John H. Aslop	50,000	July 1948	Feb. 1949
	Ralph Rodgers & Co.	2,510,000	Dec. 1948	Aug. 1950
	Milley and McBride & Co.	400,000	Dec. 1948	Aug. 1950
	Total	$33,060,000		

*Six joint-venturers: Guy F. Atkinson Co.; Bressi and Brevanda Construction, Inc.; Charles L. Harney, Inc.; W. E. Teichert and Son, Inc.; David G. Gordon; and Trepte Construction Co.

FOOTBRIDGE is more stable in swift currents . . .

FLOATING BRIDGES have new pontoon construction.

Army to launch new bridges

New military bridges to carry the heaviest equipment used by field armies or divisions are in final stages of development by the Army Corps of Engineers.

Included are floating and fixed bridges made of aluminum and steel for army and division loads; an aluminum light tactical bridge; and an aluminum footbridge. A new line-of-communications bridge is now being tested, and early procurement of a prototype of a new railway bridge is planned, according to Lt. Gen. Lewis A. Pick, chief of Army Engineers.

Necessity for rapid movement with larger and heavier mechanized equipment used by the Army has inspired development of bridges with wide roadways, designed for faster erection and able to carry heavier loads. Development and testing are by the engineer research and development laboratories at Fort Belvoir, Va.

• **New types described**—The new aluminum division-type fixed bridge—able to carry divisional combat and supply vehicles over a wide range of spans—will largely replace the Bailey bridge of World War II fame. Designed primarily for mechanical erection, it also can be hand erected. Erection times are substantially less than for Bailey bridges of comparable capacity. Erection speed is gained by using fewer parts, more easily connected.

An alternate type of this bridge, fabricated in steel, has about the same erection capabilities, even though it weighs substantially more.

The aluminum Army-type fixed bridge is a large example of the division bridge. It will carry combat and supply loads of a field army over a wide range of spans.

The Army-type bridge can be constructed with a single or double roadway, utilizing single or multiple truss construction, depending on the length of the span and the loads to be accommodated. This bridge is designed also for fabrication in steel.

• **New pontoons**—Floating bridges for division loads continue to utilize pneumatic pontoons which are adaptable to a variety of bank conditions. They are not dependent on a minimum depth of water as they are not damaged when grounded. The floats are packaged for easy transport.

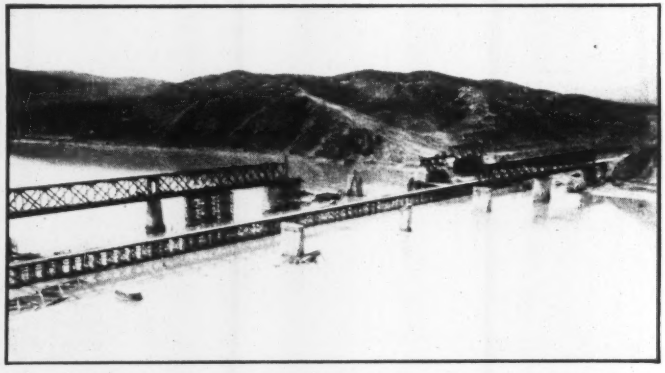
Made of neoprene-covered nylon cloth, the pontoons consist of a series of separate compartments that stand up well under strafing of artillery fire. Larger pontoons and heavier members of the floating bridge give it higher load capacity than the World War II treadway bridge.

The new Army-type floating bridge uses variations of the same superstructure components, anchoring system and approaches as the division bridge. For it, the pontoons are rigid and are fabricated of plastic or aluminum.

The new aluminum footbridge is much more stable in high velocity currents than the 1938 model it replaces. It can carry men with full field equipment while double-timing. Lighter parts and simplified coupling devices make it easier to build.

Procurement is under way for the steel division-type floating bridge and the footbridge.

Freedom Gate Bridge gets a partner



A Navy combat cameraman captured this view of the Freedom Gate Bridge and a rail bridge under construction across the Imjin River, Korea, from a helicopter enroute from the peace-talk site at Panmunjom. The highway bridge (ninth at this same location—see ENR March 13, p. 25) withstood winter ice floes in the raging Imjin. Now it is getting a partner, a rail bridge being built partly with steel structurals from a destroyed bridge. Across it will return Allied prisoners of war from Red prison camps.

$100 million construction snarled as two-month walkout continues

The Philadelphia metropolitan area for some time had enjoyed such excellent labor relations in the building and construction trades that the harmonious record attracted national attention.

Strikes were few and these were settled quickly with no bitter aftermath or recriminations.

Within the last few weeks the picture has been changed by two nasty labor disputes. The Building and Construction Trades Council and six AFL trade unions are still picketing Levittown in an attempt to force William Levitt and Sons to sign union agreements.

This, though widely publicized, has not affected the industry hereabouts as much of the strike of 1,000 operating engineers now in its second month but a strike that really started more than a year ago.

For the last month $100 million worth of heavy construction work has been paralyzed by the strike. The strike is costing the engineers $20,000 a day in wages and the 175 employers much more. Several thousand other building trades employees have had to be laid off. The contractors say they have made their last concession. The union has stuck to its guns. No new bargaining is scheduled. The prospect of an early settlement seems hopeless.

• **Work stopped**—Work on the Market Street subway has halted. So has construction on the Jefferson Hospital addition, the Schuylkill Expressway and a score of city paving and sewer jobs. All of these aggregate many millions. Some projects are still going ahead, but may be stopped whenever the hoisting of materials is indispensable. Starts on new work have been delayed.

Other inconveniences have arisen. In the Kensington section of the city, a sewer job is shut down, and residents complain of the vermin and stench.

A million-dollar lawsuit against the employers and disputed legal jurisdiction complicate the impasse. The list of union demands is long and complex. One demand is for a 25-cent-an-hour raise retroactive for a year, amounting to perhaps $500 per man. The contractors call this raise prohibitive.

The outcome, according to Harry R. Halloran, who heads the employers' bargaining group, will decide the future of the industry here. He cites the constant drain of overhead costs and the stoppage of payments to contractors for work done.

Peacemaking in trouble

The Pennsylvania State Department of Labor and Industry, in an effort to end the 20-day labor dispute at the Bucks County Levittown project, said last week it will investigate union charges that William J. Levitt and Sons are not paying going wages in the industry.

State Secretary of Labor Walker called a conference in Harrisburg two weeks ago to attempt to smooth out the differences.

The Building and Construction Trades division of the AFL charged that Levitt pays lower than usual wages by bringing in non-union labor from the Long Island Levittown to work on the 16,000-home project.

James L. McDevitt, president of the State Federation of Labor and also business manager of the Philadelphia Building and Construction Trades Council, appeared in behalf of organized labor.

"Our men cannot possibly work for such low wages," he declared. "The Levittown people set piecework prices for such things as roofs, sidings and foundations, thereby getting around the regular hourly wages."

No representative of the builder attended the conference. McDevitt charged that the company was "boycotting an attempt by the state to bring about a peaceful solution" to the dispute. Harry Kalish, member of the law firm which represents Levitt, said the invitation to the conference was received two days before the scheduled meeting. He said that he turned the invitation over to Lieutenant Governor Lloyd Wood, who acts as Levitt co-counsel, and that Wood informed Walker he would be unable to attend the meeting.

Walker said the probe will continue and further conferences will be scheduled.

Picketing in accordance with a court decree continues at the project.

• **Dispute background**—The dispute really began a year ago on May 1, the traditional date for renewing contracts with the AFL International Union of Operating Engineers.

The engineers were out for two weeks, in some cases three. They contended that their contract had expired on April 30. The employers said that the pact signed for 1950 was binding for two years.

Myron Jacoby, counsel for the contractors, took the case to Common Pleas Court. He won a ruling that the contract was for two years. The union, consisting of Local 542, 542-A and 542-B, appealed to the State Supreme Court, but lost. The union also filed suit in Federal Court, seeking $1 million back-pay and damages from the contractors and asking the court to stay the order gained in the state case. The claim for damages was based upon the 25¢ increase which the union said its men were entitled to after May 1, 1951.

Federal Judge Clary refused to stop the state court's order, but took jurisdiction under the Taft-Hartley Act. Also at issue in the federal suit was administration of the welfare fund, set up under the 1950 contract. To this the contractors contribute ten cents for each hour worked by union members. Contractor representatives contended that the fund should be used to purchase insurance to pay claims. Union representatives wanted the claims paid out of the principal.

Judge Clary appointed Dr. George W. Taylor, of the University of Pennsylvania, former chairman of the National War Labor Board, as impartial umpire under the Taft-Hartley Act.

Dr. Taylor broke the deadlock and ordered payments out of the corpus of the fund.

Disposition of the remaining $500,000 is at issue in the contract. If this is not settled by bargaining, the court may have to do it.

• **Union demands**—Roy J. Underwood, president and business manager of the engineers' locals, still claims the back pay. He insisted, in negotiations preceding the strike, that the contractors pay the 25¢ for every hour the engineers worked.

Both sides now privately admit that unless some individual or organization comes forward with an agreeable solution, the impasse could continue right over the spring, summer and early fall months—the best time for heavy construction.

Amiable talk between . . .

Peter Eller, chairman BTEA (left) and Howard McSpedon, trades council (right)

brings agreement as . . .

. . . N.Y. labor and employers adjust wages

Remarks by Peter W. Eller, chairman of the board of governors of the Building Trades Employers' Association, of New York, and Howard McSpedon, president of the Building and Construction Trades Council, of New York, AFL, at the signing of a new wage agreement.

CHAIRMAN ELLER: Howard, you were to take back the agreement which we reached the other day between our negotiating committees, that is, between the negotiating committee of the Building and Construction Trades Council and the negotiating committee of the Building Trades Employers' Association—you were to take that back to the meeting of your general committee of all trades involved. I understand you have done that, and I would be pleased to have your report. . . .

MR. McSPEDON: Well, Mr. Chairman, on behalf of all of the trades, signatories to the collective bargaining agreement, this morning, at a specially called meeting, it was unanimously voted, with a note of appreciation and thanks, to accept the effective date of August 1st of this year for all trades, including mechanics, laborers and helpers, on all work.

CHAIRMAN ELLER: Thank you, Mr. McSpedon.

Once more we have demonstrated, in a democratic way, and within the confines of our respective organizations, that we are able to reach agreement on any problem that confronts us . . .

I said in San Francisco, and I will now repeat, if we are to endure and to succeed, not only in this business, but in any business, there should be responsibility. There must be responsibility to make an agreement, and responsibility thereafter to see that that agreement is kept, and that it works.

After the foregoing scene was enacted at a meeting of the two parties to the new agreement, a joint petition was filed with the Construction Industry Stabilization Commission for approval of the new rates.

• **The agreement**—Building craftsmen in 17 trades in New York City will receive an hourly wage increase of 15¢ starting August 1st under the cost-of-living formula in the three-year collective agreement.

The increase, covering approximately 100,000 construction workers, was granted by the Wage Negotiating Committee of the Building Trades Employers' Association of New York City after seven months of collective bargaining with representatives of the Building and Construction Trades Council, A.F. of L.

In the three year collective agreement between the BTEA and the trades council, which terminates June 30, 1953, provision is made for reopening wage negotiations on a cost-of-living basis.

Negotiations along these lines began last November. The Bureau of Labor Statistics' Cost-of-Living Index for April, 1952 (the last available figure), was 10.65% higher than the index for June, 1950, when the collective agreement became effective.

Some building trades unions, such as the electricians, bricklayers, plasterers, painters and plumbers are not parties to the collective agreement, but make separate agreements with their employers.

Peter W. Eller served as chairman of the joint bargaining sessions. Fred J. Driscoll, president of the BTEA, was chairman of the negotiating committee, and Howard McSpedon, president of the Building and Construction Trades Council, headed the unions' negotiating committee.

• **McSpedon**—Commenting on the new agreement, Howard McSpedon, of the trades council, said:

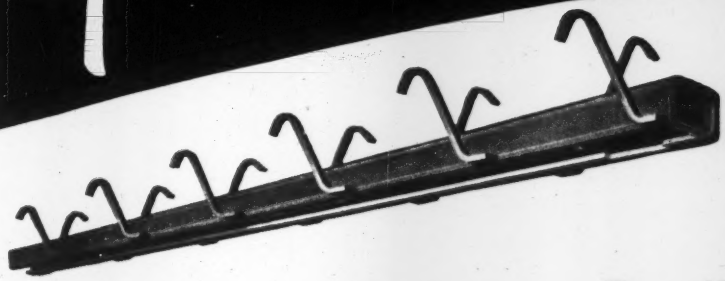
"In seeking a reasonable increase in hourly pay under present living costs, the trades council has been acutely aware of the dangers of the inflationary pressure on building costs. But we are confident that higher man-hour productivity pledged to the contractors will more than offset the rise in the pay scale so there will be virtually no increase in overall building costs."

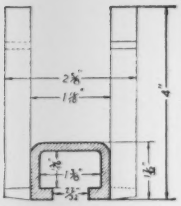
• **Driscoll**—Chairman Driscoll, of the BTEA negotiating committee, said:

"The pay rise granted the unions in our agreement, in my opinion, is a realistic approach to a tough problem. The constantly increasing inflation of living costs seriously affected our industry. We worked it out in a manner that provides a reasonable increase for the workmen and in return will bring increased production.

Gateway Continuous INSERTS

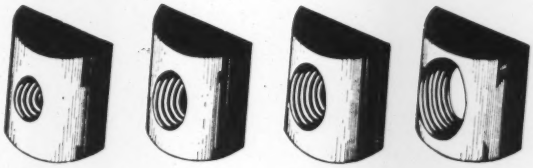
With TYPE "W" Nuts



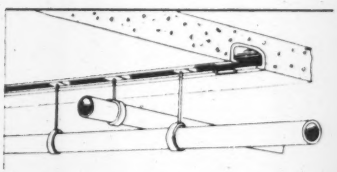


Type "G" Insert

Designed and fabricated of special rolled steel sections of substantial thickness. Available in lengths of 12", 24", 30", 36", 48" and 60". Anchors on 6" centers. Special type "W" nuts, ⅜", ½", ⅝" and ¾" sizes —standard ½", ⅝", and ¾" square head nuts, and special washers available.



TYPE "W" NUTS



THREE STEPS FOR INSERTING TYPE "W" NUT

• • Special Features • •

Gateway special type "W" nuts can be inserted anywhere in Insert without disturbing existing hangers. Type "G" Insert accommodates four sizes type "W" nuts and standard square head nuts.

Send for Catalogue 451 for full details.

SCOPE OF SERVICES

Reinforcing Steel Spacers and Chairs • Pipe Hangers • Concrete Inserts for all uses • Dovetail Anchor Slots • Dowel Caps

Removable Metal Pans • Metal Flat Slab Forms
Reinforcing Steel Setting • Sonotubes
Adjustable Shores

manufacturers

GATEWAY ENGINEERING CO.
CHICAGO 51, ILL.
3233 W. Grand Avenue
NEvada 2-1100

GATEWAY COMPANY of Ohio
CINCINNATI 25, OHIO
2836 Colerain Ave.
Kirby 6517

GATEWAY ENGINEERING CO. of Maryland
BALTIMORE 18, MARYLAND
2003 Lovegrove Ave.
Belmont 3119

NESTED in the backswamp area of southern Louisiana, Morganza floodway's new control structure will regulate the diversion of 600,000 cfs of Mississippi River flood water to the Gulf of Mexico.

Morganza: A $20 million flood gate

SOME MIGHTY BIG FLOODS have rolled down the lower Mississippi River Valley since the Frenchman, de la Tour, established New Orleans' first levee line in 1717. But meteorologists say the worst is yet to come.

They see the possibility of a flood 20% greater than the record flood of 1927. Such a flood would reach a peak flow of 3,065,000 cfs past Greenville, Miss., dropping probably to 2,800,000 cfs by the time it reached the junction of Old River and the Mississippi—about 200 river miles above New Orleans.

The prospect of a flood of this magnitude doesn't worry the Corps of Engineers. For the past 15 years they have planned on taking care of just such an emergency by placing Morganza floodway in operation.

Up to now this would have necessitated operating a so-called "fuse plug" levee at the upper end of the floodway. But in the future, flood relief discharges down the floodway will be regulated by a $20 million concrete control structure now under construction 50 river miles above Baton Rouge.

• Handling a big flood—Here's how a 2,800,000-cfs flow would be handled below the mouth of Old River—the point at which the battle to protect New Orleans against flood waters really begins.

The Corps of Engineers believe that 1,500,000 cfs could be contained safely within the Mississippi River levee system as far as Bonnet Carre spillway 30 miles above New Orleans (see map).

Bonnet Carre would divert 250,000 cfs into Lake Pontchartrain from where it would flow into the Gulf of Mexico, without damage to New Orleans. At the same time the Mississippi would carry 1,250,000 cfs safely past New Orleans and discharge into the Gulf.

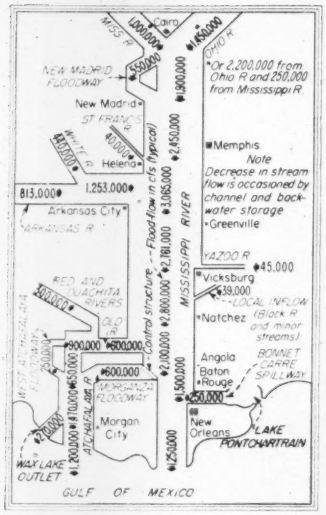
Of the remaining 1,300,000 cfs at Old River, 650,000 cfs would flow through Old River into the Atchafalaya River and on into the Gulf. An additional 600,000 cfs would be diverted into the Morganza floodway at a point about 20 miles below Old River.

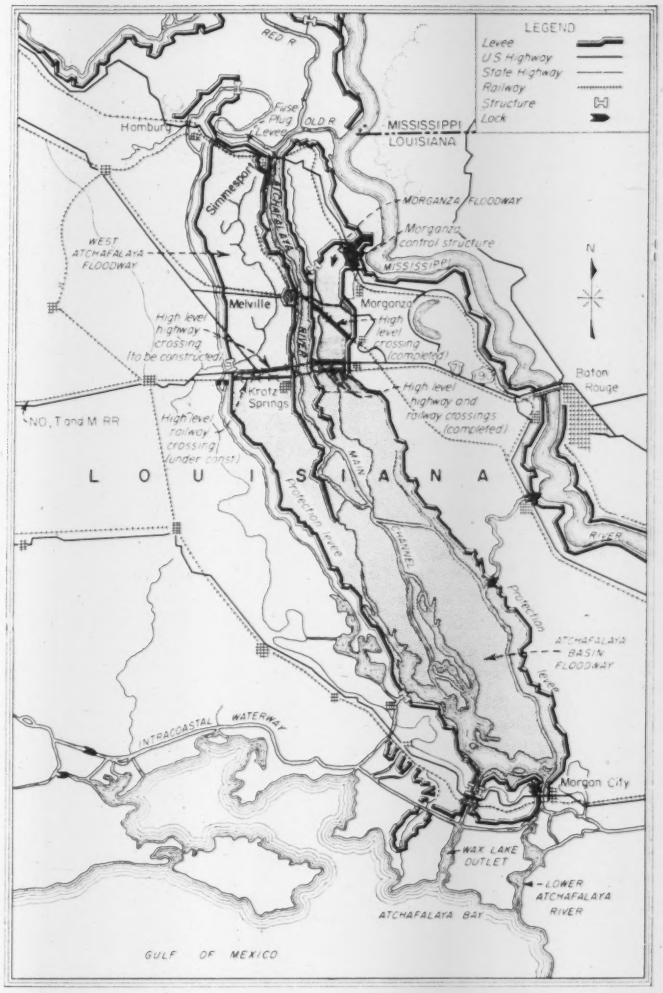
As a last resort, an extra 250,000 cfs—caused chiefly by flood flows from the Red and Ouachita Rivers—would be drawn off through the West Atchafalaya floodway. This floodway would be operated by a fuse-plug levee between the towns of Hamburg and Simmesport, La.

These three outlets—the Atchafalaya River, Morganza floodway, and the West Atchafalaya floodway—merge at a point below Krotz Springs, La. into the Atchafalaya Basin which then becomes a single floodway. The flow beyond this point would be contained between the existing levee system past Morgan City, La. until it was discharged into the Gulf of Mexico through the Lower Atchafalaya River and Wax Lake Outlet.

• Why control structure needed—Basically, the control structure will, as its name implies, control emergency diversion of Mississippi River flood waters into the Morganza floodway. Such diversion could, of course, be accomplished by blasting off the top of a section of the existing levee at a point between the river and the floodway location.

This degrading of a fuse-plug levee by blasting, however, has many disadvantages. As Colonel Holle, New Orleans District Engineer, explained it, "Decision to place a fuse-plug levee in operation must be made consider-





WHEN A SUPER-FLOOD of 2,800,000 cfs hits the lower Mississippi nearly half of it will be taken out through Old River and Morganza floodway and discharged through the Atchafalaya Basin floodway shown in detail in map, right into the Gulf.

ably in advance, due to the time required to place the explosive charges. And once such charges have been placed in the levee, safety precautions dictate that they be exploded rather than to attempt the dangerous work of their recovery."

• **Two close calls**—Twice within the past decade the Corps of Engineers have been on the verge of fuse-plugging the levee at the upper end of the Morganza floodway to give relief to the swollen Mississippi below that point. In each instance—1945 and 1940—they were able to avoid such drastic action, when flood crests receded.

"Both situations would have been difficult," said Colonel Holle, "and escape from them was too close for comfort."

These threats of having to demolish a section of the main river levee emphasize one of the chief advantages of the control structure. It can be placed in operation in such a short time that final decision to open the gates can be delayed until almost the last minute.

This may, in some fortunate instances, entirely avoid using the floodway, whereas a fuse-plug levee might necessarily have to be degraded by demolition.

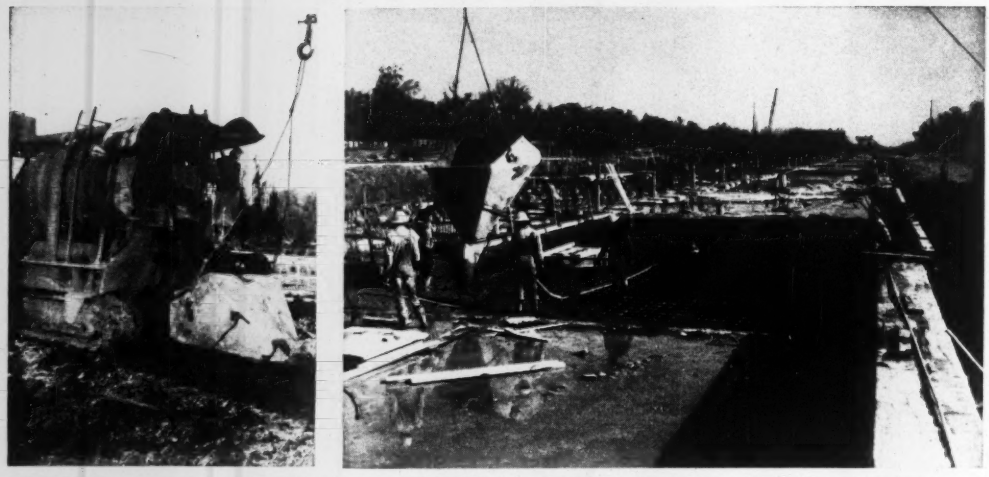
Another advantage of the control structure is that its gates can be closed as soon as the flood danger has passed, permitting early resumption of normal activities in the floodway area.

• **Stage-construction**—In programming the construction of the control structure and its several appurtenant works, the Corps of Engineers divided it up into 19 contracts. They believed this would attract more bidders, stimulate bidding and result in the most economical total contract cost possible. This, in turn, called for stage construction to avoid confusion and insure orderly prosecution of the various phases of the work.

For the past two years construction on the Morganza control structure has been pushed as rapidly as materials and a limited working area would permit. It will be operative by next January, if necessary, although its completion date is August, 1953. Project completion date is February, 1954.

The control structure is reinforced concrete, supported on long concrete piles. It is a combined structure, containing a 3,900-ft long gated weir to control the flow into the floodway, and provide a railroad and highway bridge across the floodway.

• **Nearly ¾-mile of gates**—There are 125 bays each closed by a set of two-leaf vertical-lift gates, providing 28-ft 3-in. clear width of openings. Each upper leaf is 11 ft 6 in. high and weighs 6 tons. Each lower leaf is 11 ft 4 in. high, weighing 9 tons. The two leaves will overlap slightly, forming a seal to prevent water passing



CONCRETE from 34-E paver (at left) was placed in base slab forms (at right) or in pier forms (far background) by cranes.

through the bays of the structure when closed.

Operating much as any ordinary house window, the leaves will be lifted vertically by gantry cranes operating on rails atop the structure. In opening, the lower leaf is raised first, then the other. In closing, the reverse order is followed.

Concrete piers at 31-ft 3-in. centers form guides for the gates. They also will carry the gantry crane rails, as well as the bridge deck for the Texas and Pacific Railway, and Louisiana State Route 70. Two miles of earth embankment at each end of the control structure tie it into guide levees of the floodway.

• **Tricky foundation**—Foundation conditions at the site of the control structure are typical of those found in backswamp areas in that section of the country—from 80- to 100-ft of highly plastic clay overlying a thick bed of sand. This called for a tremendous job of pile-driving.

A total of 3,700 precast concrete piles, from 85- to 125-ft long, were driven to support the heavy structures. Abutment piles are vertical but the remainder were driven to a batter of 2 on 1. Each bay is carried on 27 piles; 11 being battered upstream, and 16 downstream.

Construction of the concrete superstructure of the control structure—under construction for the past 1½ years—is scheduled for completion late this year. This $5.2 million contract includes a 3½-ft thick base slab, the weir section which extends 9.5 ft above the top of the base slab, a 10-ft cut-off wall under the upstream edge of the slab, and the piers, bridge deck, and stilling basin.

MAJOR CONTRACTS AND CONTRACTORS

Contract	Contractor	Contract price	Starting date	Completion date
Railroad fill	Grenada Dam Constructors Inc. Grenada, Miss.	$1,555,000	Apr. 1949	Oct. 1951
Railroad subgrade	J. B. Talley, St. Martinville, La.	.....	June 1951	Nov. 1951
Control Structure:				
Excavation and foundation	Raymond Concrete Pile Co. East Orange, N. J.	$2,396,000	June 1950	Sept. 1951
Concrete superstructure and gate installation	Farnsworth & Chambers Co. Houston, Tex.	$5,269,000	Oct. 1950	Feb. 1953
Furnish gates	Avondale Marine Ways, New Orleans	$937,000	Dec. 1950	Apr. 1952
Furnish Gantry Cranes	Pacific Coast Engineering Co., Alameda, Calif.	$243,000	Jan. 1951	Dec. 1952
Riprap	John Yakimo, Dallas, Texas	$908,000	Sept. 1951	Dec. 1953

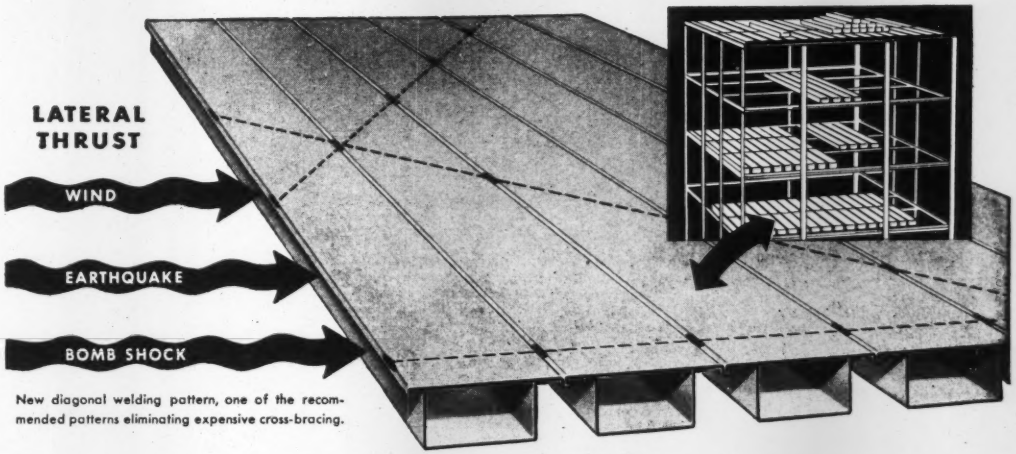
Other contracts, now under construction or to be awarded, include: Railroad ballast and track; highway embankment and paving; levee construction; floodway clearing; and relocation of telephone, power and telegraph lines.

• **Mud and cramped quarters**—"The two biggest construction problems," said Elmer Joiner, construction superintendent on the superstructure contract, "were mud and a restricted working area between the control structure and the T. & P. Rwy. line which parallels the structure a short distance upstream."

One of his first operations was to build a 4,000-ft long work road extending along the upstream side of the structure, between it and the railroad. It was bladed and shaped, and surfaced with pit-run gravel. Additional gravel is added as needed to keep equipment from miring down in mud.

Concrete-placement in the base slab was started near the center of the structure, to keep out of the way of the pile-driving contractor who was working his forces near the ends of the structure.

A batching plant was set up at one end of the haul road. Aggregates and cement are hauled to a pair of 34-E twin-batch mixers that work along the



New diagonal welding pattern, one of the recommended patterns eliminating expensive cross-bracing.

NEW...TO HELP YOU ACCURATELY DESIGN PANEL FLOORS FOR EARTHQUAKE... WIND AND BOMB-RESISTANCE...

By using Fenestra's* cellular sheet steel "D" and "AD" Building Panels or Holorib Roof Deck, following the methods given in Fenestra's "Seismic Building Design" brochure, you can stiffen your buildings against earthquake, wind and bomb shock. You can thus take full advantage of another asset of light-gauge steel construction and save building time, labor, materials and money.

Fenestra Metal Building Panels form combination floors and ceilings, or ceilings and roof. And after exhaustive tests in earthquake-conscious Southern California, Fenestra and consulting engineers have developed a design method that enables you to take full advantage of the diaphragm action of Fenestra Building Panels and predict behavior under given loads. You can get complete details on Fenestra Diaphragm Design from the free booklet offered in the coupon at the bottom of this page.

Multi-purpose Fenestra Building Panels cut the cost of building. The long-span, structurally strong units interlock easily and quickly by male and female joints and are speedily welded into a continuous deck plate. They save time and labor on the site. And their diaphragm action is tremendously important in view of today's need for buildings with bomb-shock resistance.

Approved by the Pacific Coast Building Officials Conference. For full information on the Fenestra Lateral Diaphragm Design Formula, send the coupon below. Or call your Fenestra Representative.

*Trademark

Fenestra METAL BUILDING PANELS

...engineered to cut the waste out of building

Full Information—FREE BOOK

Covers the complete design story, including:

Background of the test program
Summary of results.
Design method and example.
Detailing the diaphragm.
Fenestra Panel properties.

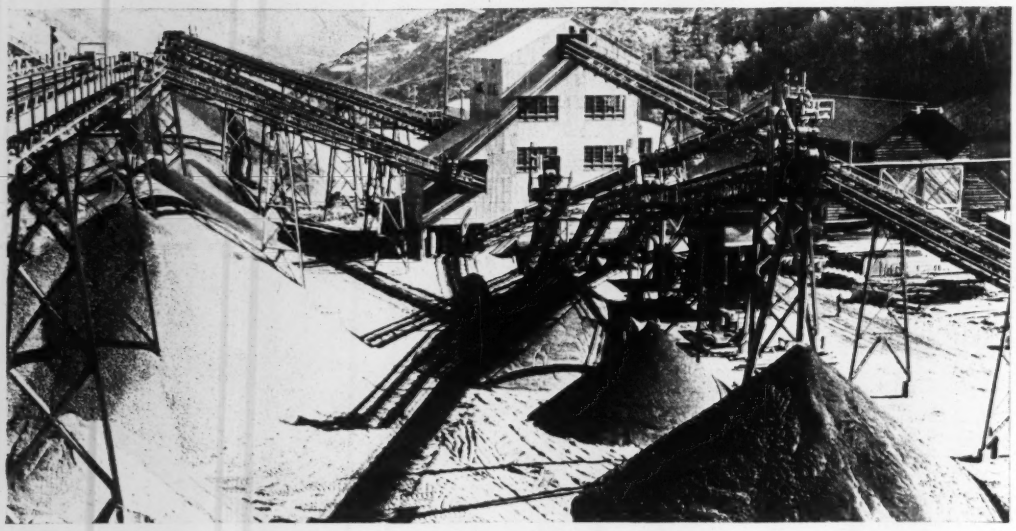
DETROIT STEEL PRODUCTS COMPANY
Building Panels Division
Department ER-6, 2286 E. Grand Boulevard
Detroit 11, Michigan

Please send me your design book on lateral diaphragm construction and full information on Fenestra Building Panels.

Name_____

Company_____

Address_____ City_____ State_____



Part of the extensive Link-Belt belt conveyor system at the gravel preparation plant, Hungry Horse Dam, Montana.

Rely on one source... one responsibility for the best in belt conveyors

LINK-BELT engineering experience plus quality components combine to cut handling costs

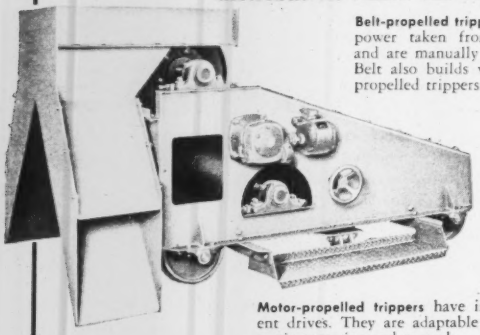
WHETHER you must move a few tons a day or several thousand tons per hour . . . whether the haul is measured in feet or miles—you'll find the answer in belt conveyors at Link-Belt.

Here's a nation-wide engineering organization that will follow through from start to finish—the designing, manufacturing, erecting of conveying equipment. And nowhere can you match Link-Belt's combination of vast application experience . . . complete line of quality components . . . expert coordination of related equipment.

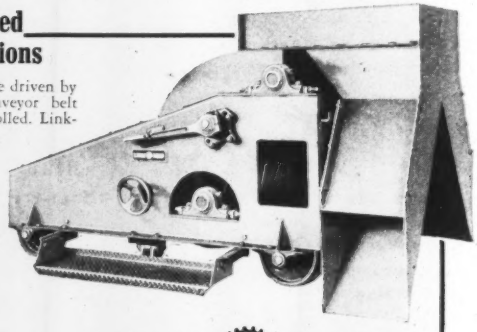
Get all the facts from the Link-Belt office near you. Link-Belt engineers are glad to work with you and your consultants—help you get the finest in belt conveyors.

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, Duluth, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices in principal cities.

LINK-BELT Trippers offer controlled distribution under all conditions



Belt-propelled trippers are driven by power taken from conveyor belt and are manually controlled. Link-Belt also builds winch-propelled trippers.



Motor-propelled trippers have independent drives. They are adaptable to automatic operation and control.

12,685-F

LINK-BELT

BELT CONVEYOR EQUIPMENT

haul road. Concrete from the mixers is placed in the forms by 110-ft boom cranes; building the slab, weir section, piers, and highway and railroad deck in successive stages.

Slab and weir are built in monoliths 62 ft 6 in. wide; each monolith supporting two piers and corresponding lengths of deck. Three sizes of concrete buckets are used by the crane. They are of 1-, 1½-, and 2-cu yd capacities, depending on the required reach of the boom.

The base slab for a monolith contains 508 cu yd of concrete, which required an average placement time of 7 hr. The base slab for the monoliths was poured in alternate 62½-ft widths.

Pier walls are being formed with panel timber forms, and the deck structure is being formed with special steel forms.

• **Steel bridge-deck forms**—Five sets of steel forms are used for supporting the 24-ft wide highway roadway and gantry crane bridge girders, and five for the railroad deck. Both highway and railroad deck structures are reinforced concrete T-beam and slab construction.

Travelers for handling the steel forms operate on rails laid on the stilling basin slab just downstream of the railroad deck. These rails parallel the structure. Transfer carriages, which operate on rails between the piers, carry adjustable travelers that move the deck forms in and out of the bays. Hydraulic jacks on the transfer carriages raise the forms into position for placing concrete, and retract them to move them to the next bay.

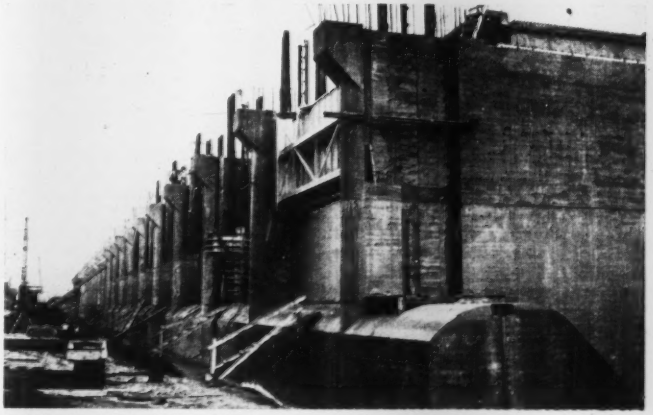
After the deck forms have been positioned by the adjustable traveler, they are supported at their ends by pipe columns and pipe jacks. This releases the traveler for setting other forms.

• **Engineers in charge**—Design and construction of the control structure and appurtenances, and an additional $20 million worth of work in the Morganza floodway, is under the jurisdiction of Brig. Gen. Peter A. Feringa, president, Mississippi River Commission.

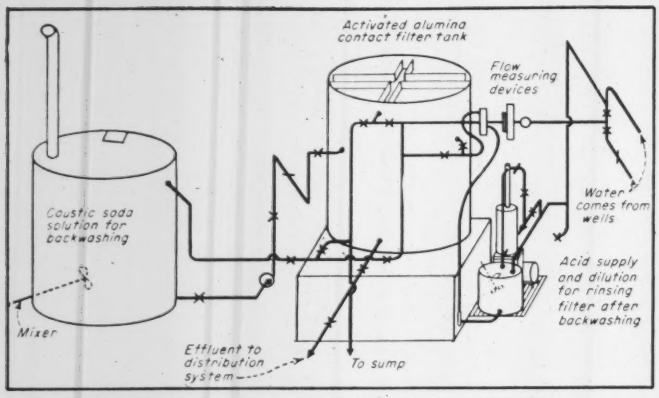
The work is being performed under the supervision of the New Orleans District. Col. Charles G. Halle is district engineer. Others closely connected with the project include: Norman R. Moore, chief, Engineering Division, Lower Mississippi River Division, Vicksburg; George H. Hudson and D. L. White, chiefs of the Engineering and Construction Divisions, respectively, of the New Orleans District; Martin G. Chitty, field assistant to the district engineer; and John W. Harris, project engineer.

LONG EMBANKMENTS on each side of the control structure will tie it into upper and lower guide levees of the floodway. Existing levee will be degraded for flood diversion.

PRECAST CONCRETE PILES—battered both upstream and downstream—were driven through 100 ft clay to support the heavy control structure. (Corps of Engineers photos.)



125 TWIN-LEAF GATES will control flood discharges into the Morganza Floodway. Concrete piers will carry both a highway and a railroad across the floodway.


Activated alumina contact filter tank
Flow measuring devices
Water comes from wells
Caustic soda solution for backwashing
Acid supply and dilution for rinsing filter after backwashing
Mixer
Effluent to distribution system
To sump

OPEN FILTER of activated alumina will take fluorides out of Bartlett, Tex., water.

New fluoride removal method cuts costs

REMOVAL of tooth-damaging amounts of fluorides occurring naturally in water supplies is cheaper by a new process. In March a plant was completed and put in operation at Bartlett, Tex., in which the fluorine content of the raw water is being reduced from 8 to 1 ppm, the proportion at which fluorides are advantageous to teeth. Removal is accomplished in an open, contact installation.

An earlier attempt to remove fluorides used a pressure-contact system at Britton, S. D., in 1949 (ENR Jan. 19, 1950, p. 40). In both locations fluorosis, mottling of the teeth, shows up in almost all children and adults who have continuously used local waters. To remedy this health hazard the U. S. Public Health Service initiated the fluoride removal projects in cooperation with municipal officials. The projects in both cases were financed in equal portion by municipality and federal agency.

While the pressure-contact system is still operating successfully, it is believed that the open, contact installation using a different sorbent has certain advantages. Among these is the fact that processing can be closely observed and controlled; another is lower operating and equipment costs.

• **Cheaper filtering**—The plant at Bartlett was built to demonstrate that fluorides can be taken out of water supplies by simple low-cost processing. The system consists of a contact filter tank, filter media, regenerating and neutralizing equipment. It cost only $10,000.

Technically, complete ion removal could be used for the reduction of fluorides, but the process would not be practical because much of the water will be used for spraying the lawn, washing, and household purposes, where the presence of other mineral constituents is not objectionable. Therefore, the problem is to find a sorption media that will reduce essentially only the fluorides. While the synthetic hydroxy apatite used at Britton gave satisfactory results it is believed activated alumina in use at Bartlett has advantages.

Raw water passes by gravity, at the rate of 450 gpm, through the contact filter, an open vertical, cylindrical, lined steel tank. This tank is filled to within 4 ft of the top with activated alumina that absorbs or adsorbs fluorides. The exact nature of the sorption is not known. There are 500 cu ft of 28 to 48-mesh alumina. The bed is supported on 12 in. of gravel of three grades. Under-drainage is through 0.25-in. strainers on a pipe grid.

During passage of the raw water through the activated alumina, pH remains constant. Considerable hydrogen sulphide bubbles up and escapes into the atmosphere. Whether or not the sorption media significantly affects other constituents of the raw water has not as yet been determined.

• **Reduced to desirable**—Treated water goes to the distribution system containing 1.0 ppm fluoride.

At present the plant is operating on an 8-day cycle, but it is expected that eventually it will be on a 7-day cycle (although the length will vary with the season of the year and local conditions). The plant is presently operated about 10 hours per day.

At the end of the cycle, activated alumina is regenerated in two hours. This is done by backwashing to remove foreign matter retained on the alumina, and by forcing a caustic soda solution through the alumina followed by a rinse of weak sulphuric acid.

Either raw water under well pressure or treated effluent can be used for backwashing. Waste water is discharged through a sump to the sewers. Then 5,200 gal of a very weak caustic solution is delivered by a centrifugal pump from the caustic mixing tank to a cross-shaped pipe grid distributor located just above the surface of the alumina. The solution passes down through the bed of sorptive particles.

The most efficient strength of caustic soda solution will have to be determined for the caustic will be recovered and reused, and because the strength of the caustic affects the fluoride removal capacity of the bed and the length of the run. There is a certain point at which the optimum fluoride removal is obtained with a given quantity of caustic. Also, the amount of caustic recovered varies with the original strength.

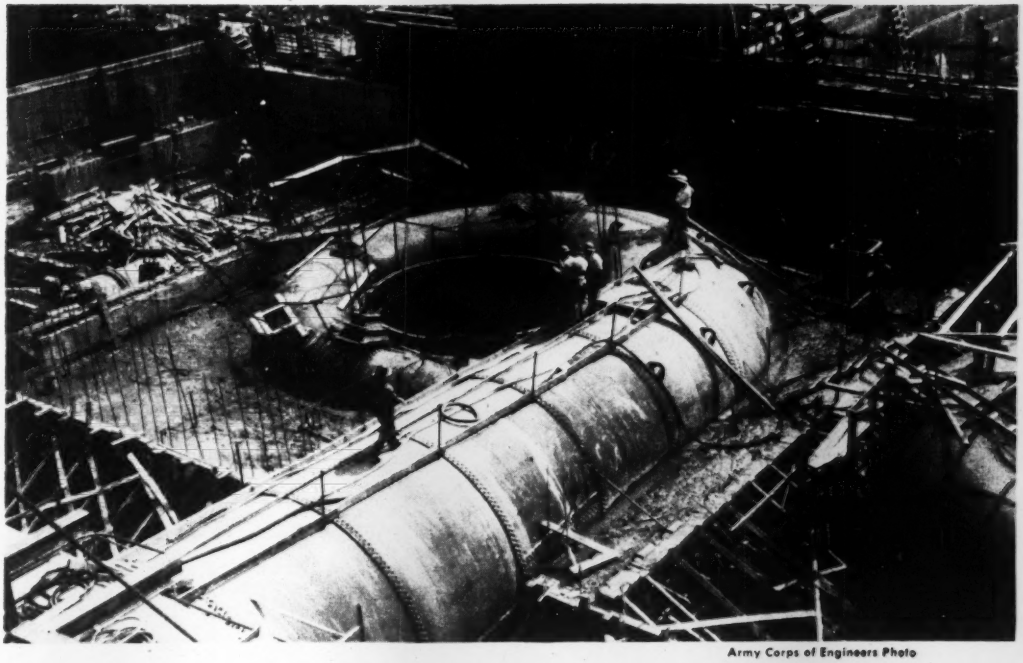
The next step is the rinsing of the alumina with water. It is during this rinsing operation that the caustic appears in the effluent from the contact tank and its recovery for use in the next cycle is carried out. When the caustic mixing tank is full, rinsing is continued in order to remove any further caustic that might be present. This additional rinse water goes to the sewer. The caustic is not strong enough to cause trouble in the Hays-process (contact aeration) sewage treatment plant which is now being used at Bartlett.

Very dilute sulphuric acid is then passed through the alumina to neutralize any caustic that may remain in the contact tank.

Output from the plant is controlled by elevation of treated water in ground storage tanks. It is done by means of a float switch which actuates the relays controlling the well pumps. When ground storage becomes full this switch cuts off the well pumps. In order to prevent the bed from draining, and thus becoming air-bound, a diaphragm-actuated valve on the effluent line from the plant automatically closes. The diaphragm valve on this line is actuated by water pressure controlled by a float in the contact tank. If the bed becomes clogged for any reason while the pumps are operating, the same float actuates a Mercoid switch which cuts off the pumps.

Cost of equipment for this plant amounted to about $10,000.

F. J. Maier, sanitary engineer of PHS, Division of Dental Public Health, is responsible for the processes in use at both Britton, S. D., and Bartlett, Tex. He also supervised construction and guided initial operation of both plants.



Army Corps of Engineers Photo

Scroll case embedment at Bull Shoals Dam, White River, Arkansas. Photo shows lower half of case embedded by first lift of Prepakt Concrete. Second lift covered entire case to specified height.
General Contractors—Ozark Dam Constructors

SPEAKING OF ADVANTAGES...

Two ten-foot lifts instead of ten shallow lifts—full zone encasement instead of quadrant placement—reduced formwork and surface preparation costs—twenty days placement time saved!

These are a few of the advantages made possible with Prepakt Concrete methods and materials at Bull Shoals Dam, White River, Arkansas. By pre-placing the coarse aggregate, then grouting the mass with Intrusion mortar, Prepakt accomplished full encasement of the scroll cases in much less time than that normally required for standard placement methods.

Add to these the Prepakt advantages of no setting shrinkage, low heat of hydration, high strength, and resistance to deterioration, and you have the practical answers to why Prepakt is your best choice for concrete structures.

Write today for full information on this and other types of Prepakt construction. Address the Home Office, Union Commerce Building, Cleveland, Ohio.

CONTRACTORS • ENGINEERS

PREPAKT

SPECIAL SERVICES

INTRUSION-PREPAKT, INC. THE PREPAKT CONCRETE CO.

CHICAGO • TORONTO • SEATTLE **CLEVELAND 14, OHIO** SAN FRANCISCO • PHILADELPHIA

ZURICH • PARIS • MADRID • STOCKHOLM • HELSINKI • BERLIN

"We just naturally chose Dodge!"

. . . says **K. F. HOFFMAN**, *owner, Tri-State Excavating Company, Dubuque, Iowa*

"We first tried a Dodge truck in 1946," says Mr. Hoffman, "and we were so pleased with it that when we needed a new truck in 1951 we just naturally chose Dodge!

"Dodge trucks give the kind of performance we want—there's plenty of power for our heavy jobs. They're economical trucks, too. Expenses for gas, oil and upkeep stay 'way down, year after year."

Certainly, Mr. Hoffman realizes additional profits each day through the low-cost power of Dodge "*Job-Rated*" trucks—and so can you! *Whatever* you're doing—hauling dirt, spreading asphalt, or any one of many rugged jobs—there's a Dodge truck engineered at the factory to fit the job, save you money, last longer. For example, a Dodge "*Job-Rated*" 2½-ton model has a powerful 114-h.p. engine—plus the extra maneuverability made possible by short turning diameter . . . the added dependability assured by moistureproof ignition . . . and many other outstanding advantages.

Why not *make sure* that you get the power and dependability you want on *your* job? The man to see is your helpful Dodge dealer. His "welcome mat" is always out for you, and he'll be happy to give you just the information you need about the right truck for your hauling job.

DODGE "Job-Rated" TRUCKS

COFFERDAM TRIO for one pier is in (background, left) as wale-ring fabrication begins for another. Three sets of bracing are built and installed together.

Three cofferdams for every pier . . . .

That's the way Diamond Construction Co. chose to build Jacksonville bridge foundations

DIAMOND CONSTRUCTION CO. of Washington, D. C. has quite a reputation for "clean" cofferdam jobs. The technique first came to light in an ENR article published July 7, 1949 (p. 73).

Describing foundations for the Turtle River Bridge at Brunswick, Ga., the article told how Diamond welded complete bracing assemblies on shore, barged them to place, and set them by sliding them down spud piles at their corners. At design elevation they were pinned off to the spuds and sheet-pile driving began.

Lately, at Jacksonville, Fla., Diamond has been placing three cofferdam bracing assemblies at a time by the spud-spotting method.

It came about this way. Piers for the Gilmore Street Bridge were designed as triple concrete shafts, founded on a level marl formation and tied together at the top by heavy concrete beams.

The contractor had the choice of installing a single cofferdam to contain all three shafts, or of installing individual cofferdams. He chose the latter alternative.

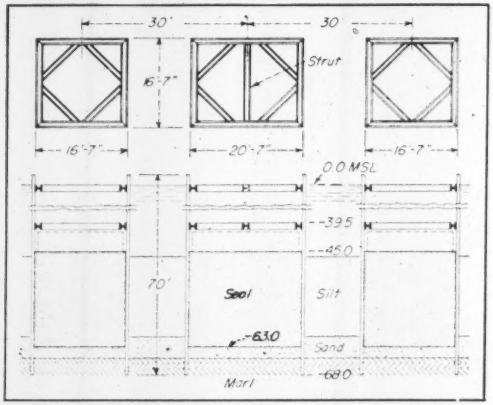
• **Frames tied together**—Then he followed his customary procedure—building the cofferdam bracing assemblies on shore. But he built the three assemblies for a single pier in their final relative positions. Then he installed tie beams across the top wales. These beams were welded at points of contact with the three individual bracing assemblies. They were long enough to project beyond the outer wales of the

Gilmore Street Bridge

Gilmore Street Bridge is one of three major structures now being built as part of a $50 million expressway system in Jacksonville, Fla. Its cost is $5.3 million. Overall length is 3,667 ft. It will carry two 26-ft roadways divided by a 4-ft median strip. Side spans will be continuous beams, continuous girders and continuous trusses. The ship channel will be spanned by a double-leaf truss bascule that will give a clear channel opening of 174 ft.

Designers are Reynolds, Smith and Hills of Jacksonville, and Parsons, Brinckerhoff, Hall and MacDonald, New York. P. M. Huddleston was in charge of design. C. L. Lash is resident engineer. Diamond Construction Co., Washington, D. C. has the substructure. Allied Structural Steel Co., Chicago, and Industrial Contracting Co., Minneapolis, will build the superstructure. Substructure work is more than half complete.

SHEETPILES are driven for Pier 25, the deepest on the job. Bearing piles standing at the outer corners were used to spot and support the bracing.



DEEPEST COFFERDAM was slender, stoutly braced. Diagonals were welded in as dewatering progressed. Strut was a temporary member.

outer assemblies, providing pick-up points. Wood struts between assemblies at a low level held the assemblies plumb during lifting.

Putting the triple-cofferdam bracing system on a pair of barges, Diamond floated it to place alongside a floating crane, set the spud piles in bar-steel loops inside the wales at the four outsides corners, jockeyed (by give-and-take on anchor lines) to correct position and drove the spuds. The crane lifted the bracing system for barge removal, then lowered away to grade, where the system was pinned off to the spuds.

Sheetpile driving proceeded for the three cofferdams, the tie beams and struts being removed for closure after bracing loads were transferred (by spot-welding) to already-driven sheetpiles.

• **Deep cofferdam**—Cofferdam depths, to bottom of seal, varied down to El-63. Cofferdam plan dimensions were 16 ft 7 in. (parallel with bridge centerline) by: (1) 16 ft 7 in.; (2) 20 ft 7 in.; and (3) 16 ft 7 in. These small plan sizes made units of the deepest cofferdam trio quite slender (they were much smaller, but 20 ft deeper than the largest Turtle River cofferdam).

Because of this depth and slenderness an account of its construction procedure is given.

Water depth at this pier (Pier 25) is 45 ft. There is about 15 ft of muck, then 4 ft of sand over the marl.

HEAVY BEAM ties pier's triple shafts together at top. Gilmore Street Bridge will carry two 2-lane roadways.

Bracing assemblies for Pier 25 were built with seven wale rings (14-in. BP 73 lb) to go at elevation-39.5, -36, -31, -25, -17, -9 and zero. Without diagonal wale braces they were positioned together with the spuds, and their sheetpiling was driven about 3 ft into the marl.

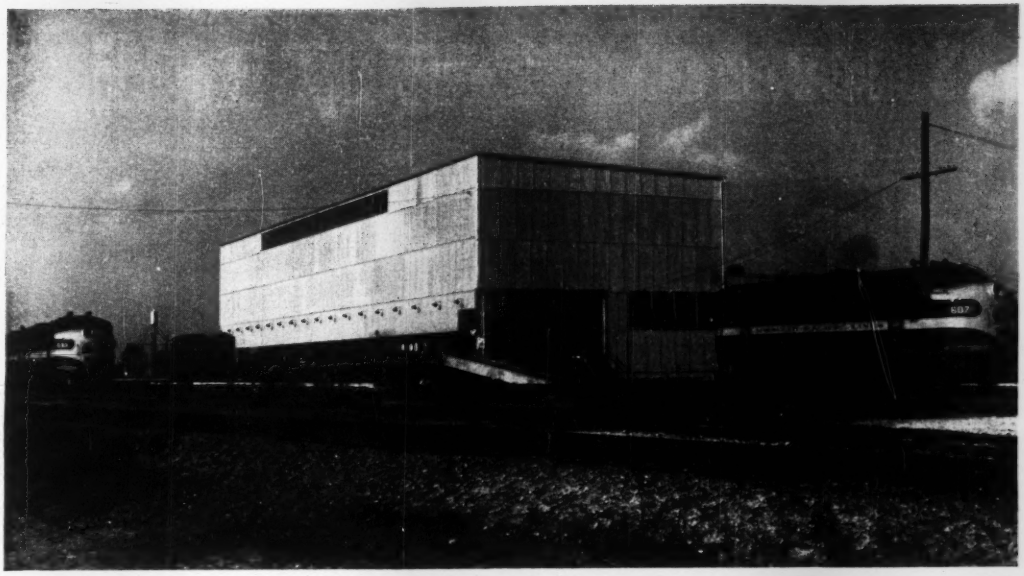
Silt was removed with an airlift, partly because the material was so soft that an ordinary clamshell couldn't hold it efficiently. But also because the airlift could do a clean job and not batter the frames the way a clamshell might. Bearing piles were driven to a 25-ft penetration in marl. Preferring to drive them above water, the contractor used H-pile spliced to about 100 ft length.

While dewatering each cofferdam the contractor paused at each wale level long enough to weld four 12-in. WF diagonal corner braces in the horizontal plane.

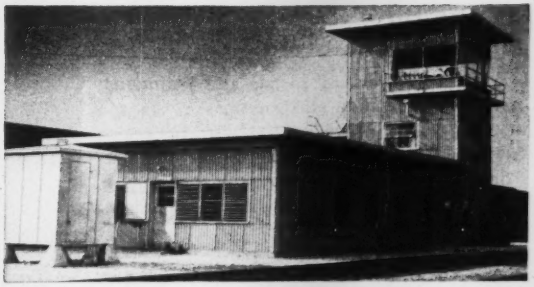
Installation of corner braces in the middle (larger) cofferdam was aided and protected by two struts that were set temporarily across the middle of the short dimension. These were leap-frogged downward, a strut being placed in a ring before its corner braces were welded in.

Dewatering went according to plan, with one exception. At the sixth ring (El.-36) in the middle cofferdam, wale members showed various distortions, probably caused by hydrostatic pressure in combination with some sheetpile displacement during the seal pour. An additional wale ring was welded in place directly above the sixth regular ring, and dewatering was completed.

Dewatering the center cofferdam, installing the bracing and cutting off the bearing piles took four days.



There's no maintenance problem where you use "CENTURY" corrugated asbestos-cement sheets



Diesel Repair Shop, Signal and Control Tower at the Settegast Freight Yard of the Missouri Pacific Lines at Houston, Texas. Buildings sided with long-lasting "Century" Corrugated Asbestos-Cement Sheets. Engineers and Builders: The Austin Company

As you know, among railroading's headaches are its many maintenance jobs. Here a big one was lopped from the list, right at the start—by the use of "Century" Corrugated Asbestos-Cement Sheets . . . because roofs and siding of "Century" Asbestos Corrugated reduce upkeep to a minimum.

Buildings so constructed provide permanent protection for men, equipment, materials and finished products. "Century" Asbestos Corrugated *can not burn, rot or rust;* rodents and termites can't hurt it; it resists many chemical fumes. And regardless of climate, driving winds and deluging rains, it never needs protective painting to preserve it!

This unique material can be applied quickly, easily and inexpensively. The sheets are very strong, yet can be cut and drilled with ordinary working tools, and fastened in place with a minimum of labor.

If you are planning to construct from the ground up, or need merely to "re-cover" an old building, give earnest consideration to the outstanding money-saving qualities of "Century" Corrugated Asbestos-Cement Sheets for both roofing and siding. We'll be glad to send you complete details on request.

Nature made Asbestos . . .
Keasbey & Mattison has made it serve mankind since 1873

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

Motorola 2-Way Radio

speeds Construction Operations

Construction superintendent directs and coordinates operations over the Motorola 2-way radio —talking *right now*, and regardless of location, to working crews located at remote points of your operation.

The figures are convincing.

Your operations too can beat former production records with Motorola 2-way radio—saving time, costs, outage and dead mileage—keeping your production lines in gear from excavation to final clean-up.

You're right the first time with Motorola.

It costs less to install and maintain, year after year, than all others.

With eight leading developments, years ahead of the field, including the famous "Sensicon" sealed selectivity, your investment is safe from obsolescence.

So be ahead and stay ahead with Motorola.

Remember there are twice as many Motorolas in service as all others combined —with *the reason* built into every one.

Experience Counts! OVER 22 YEARS OF LEADERSHIP IN MOBILE RADIO!

It costs you nothing to find out—from a qualified Motorola engineer. Don't delay! Wire, phone or write for immediate and generous information.

Driver reporting position of his truck and status of work from distant operations point, receives orders from the control dispatcher saves hours and miles of wear, risk, and fuel.

Motorola

Communications and Electronics Division
4501 AUGUSTA BLVD. • CHICAGO 51
In Canada:
ROGERS MAJESTIC ELECTRONICS LTD. • TORONTO, ONT.

THE QUACK OF A DUCK is the kind of a noise that annoys an oyster.

Trouble on Moriches Bay

HALF the commercial duck production of the U. S. centers on Moriches Bay of Long Island's south shore where 4 to 5 million birds are reared yearly —much to the distress of the Blue Point oyster.

Things have reached such a pass—ducks being ducks and two-thirds of the country's commercial duck farms being within the 70-sq mi Moriches Bay drainage basin—that New York State's Water Pollution Control Board has had to come to the aid of the oyster.

This is no small pollution problem. Ten ducks are estimated equivalent to one human when it comes to contributing pollution. So with 200,000 quacking members of the Anatidae family on the water at practically any time from April 1 to Nov. 1, there is water pollution of city-scale to contend with.

And the oysters can't contend. Their gills are clogged by algae growths. What's worse, fertilized by phosphates in the duck droppings these prolific algae blooms also stimulate growth of a parasitic, oyster-attacking worm.

• **Oyster's round coming**—But the ducks have had their day; the bivalve mollusk now has the forces of righteousness behind him. Waters of the drainage basin were officially classified, effective Oct. 1, 1951. A plan for abatement of pollution has been drawn, pursuant to state public health law.

The Long Island Duck Growers Marketing Cooperatives, Inc., will cooperate this summer with state sanitary engineers in research and pilot plant tests that should find some solution to the problem.

Solution must be cheap. All 49 duck farms in the basin hardly total $5\frac{1}{2}$ million dollars in assessed valuation. The growers cooperatives has put together $12,000 for the study to be made this summer, but that study must come up with something simple, if the growers are to be financially able to construct it.

A full-time sanitary chemist has set up shop at the Riverhead (L. I.) sewage treatment plant to make the investigations. Alden Young, of Riverhead, will act as consulting engineer to the duck growers. Pilot plants are under construction and near readiness for operation.

• **No laughing matter**—Here's what the duck population has done to Moriches Bay:

They've polluted it to a point where it's difficult for navigation and unfit for bathing in some areas. They have it so heavily laden with coliform organisms that extensive areas are unfit for taking of shellfish. And by contributing mineral substances (mainly phosphorus) they have indirectly brought about conditions that damage shellfish growth. An algae—chlorella—grows so thick that a white dinner plate held 18 in. deep in waters of Great South Bay (home of the famous Blue Point) can't be seen in many places.

• **No known solution**—There is no known satisfactory means of cleaning up the bay, short of switching to "dry duck farming" methods. And the Water Pollution Control Boards feels it lacks authority to order such a switch at this time. Disposal of the wastes on land by flushing duckponds into irrigation ditches may be a possibility, but only if it can be done without creating nuisance.

At present, ducks take to water in 3 to 4-in. deep ponds diked off from the bay. These flow-through ponds keep fairly clean, largely due to agitation given them by the ducks. This same agitation mixes a lot of sand with duck droppings in the effluent making it quite susceptible to rapid clarification by settling.

This summer's studies will compare clarification in a tank mechanically equipped for sludge and scum removal; an Imhoff tank; three plain sedimentation tanks in series; and manually cleaned lagoons operated alternately in pairs.

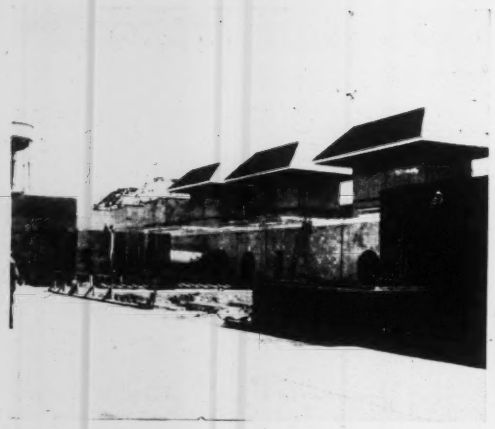
Handling of the sand-ladened sludge will be a problem. Storage pits to hold a season's accumulation seem the sensible thing; these could be cleaned out by tank truck for disposal (somewhere) in winter when duck population falls to 5% of its peak. Digestion of the sludge is an unknown to be investigated. Its use as fertilizer is still another.

There won't be much left to be learned about duck wastes when investigations now getting started are finished. Analyses will check total solids, volatile solids, suspended solids, settleable solids, BOD, organic nitrogen, chloride, phosphates, nitrates, pH, alkalinity, and chlorine demand.

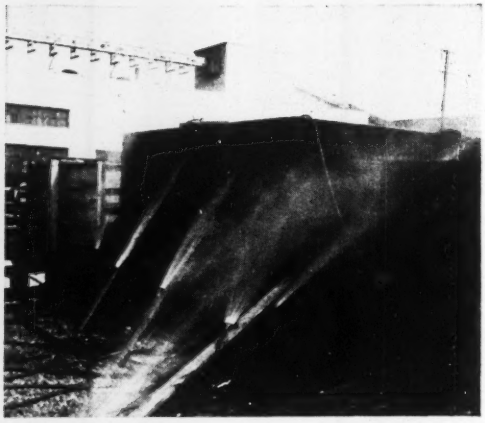
By Jan. 1, 1953, the duck growers are to have their answers. It is planned that they should have in effect at least methods for keeping sludge solids out of natural waters by April 1 next.

If this summer's research should bear no fruit, further studies will be outlined. But observers are hopeful that one season of study will solve the problem.

Relief for the oyster—at least partial —may be but one year away on Moriches Bay. *Photo by Joseph Adams*



PRECAST SECTIONS of refractory concrete enclose the high-temperature zones in jet-engine test cells at Lockland, Ohio.



WATER SPRAYS cooled concrete surfaces, whereas water-cooled tubes were embedded in the concrete to cool the interior.

Heat-resistant concrete for jet test cells

TEMPERATURES as high as 1,200 F will be reached in the concrete exhaust stacks of the jet-engine test cells being built for the Aircraft Gas Turbine Division of the General Electric Co. at Lockland, Ohio. If the concrete were made with ordinary portland cement and natural aggregates, it would disintegrate quickly. Consequently, techniques had to be developed for making a superior concrete—one that would retain its structural integrity under cyclical attack of intense heat and erosive high-speed air blasts.

A second problem faced by the builders was how to produce concrete units with the ability to attenuate low-frequency sounds and yet withstand this heat and erosion.

General Electric went to its engineers and contractor and to a materials specialist for the answers. This team, working in close harmony, came up with a satisfactory solution.

• **Two refractory cements used**—It found that cement that makes good heat-resistant concrete has a high alumina content (Al_2O_3)—at least 30% and preferably nearer to 40%—a high iron content (Fe_2O_3 and FeO), and a very low lime content (near 38%)—specifically no free lime. It is coarser ground than portland cement, with about 1,500 sq cm of surface area per gram.

Aluminous-cement concretes have greater heat-resistant properties than portland-cement concretes, which powder and disintegrate at temperatures under 400 F. Aluminous-cement concretes withstand temperatures well above 2,000 F.

Such aluminous cement, however, has a very high rate of hydration. It has rapid final set and hardening properties, but time of initial set is no more rapid than that for normal portland cement. Concrete made with it is relatively difficult to handle and demands more water during the hydration period than portland cement. The average aluminous cement makes harsh mixes and tends to bleed greatly.

Despite these disadvantages, the design team recommended aluminous cement. It specified two types—a British and a modified American aluminous cement.

The two cements have somewhat different characteristics under the conditions of use. The American cement, containing an integral agent to retard the rate of heat of hydration and to produce more plastic mixes, is less difficult to handle in large pours. This may simplify control of concrete and production of structures having predictable qualities.

Exhaust stacks are being constructed with each cement, making possible a comparison of their behavior.

• **Aggregate heat treated**—The design team also recommended an artificial aggregate. Natural aggregates—even dense igneous trap rock—break down under heat attack, particularly under the abrupt change encountered in the exhaust stacks—from room temperature to 1,200 F in eight seconds.

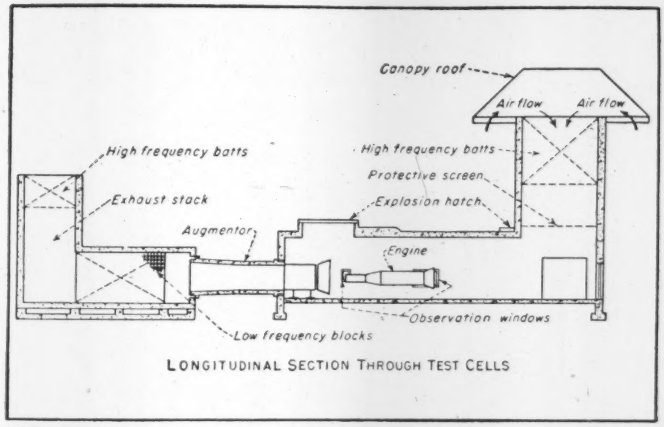
The artificial aggregate used at Lockland is Haydite, a porous but strong material manufactured from medium-strength shale in kilns at 2,300 F. The design team did not consider other artificial aggregates as satisfactory for strength and durability as this material. In fact, they noted a wide variation in quality between different sources of Haydite.

• **Lightweight mix results**—Finally, the design team specified a heat-resistant concrete with the following proportions by dry, loose volume: One part aluminous cement; 2.4 parts fine Haydite (A size); and 3.0 parts coarse Haydite (¾-in. stone size, designated as C). The water-cement ratio is 8.5 gal per sack of cement, including all surface and absorbed water, the aggregate absorbing about 9% by weight. The mix is equivalent to about 6.25 sacks of cement per cubic yard.

This concrete weighs about 110 to 120 lb per cu ft. It develops 3,000 to 5,500 psi compressive strength in 24 hours—when properly cured. It also has low heat-transmission and low sound-transmission properties.

Laboratory studies indicated that cyclical temperature attack might ultimately bring the concrete's compressive strength down to 2,500 psi. For this reason, the designers used 1,700 psi for f'_c with a factor of safety of two-plus for refractory use. Tests on some one-year old cores showed strengths of 3,800 to 4,000 psi. Other cores of the same age tested to 2,600 psi and less. The decrease in strength is attributed to high air temperatures and high internal temperatures of the setting concrete.

• **Forms stripped early**—Forms for aluminous-cement concrete were stripped as soon as possible, and they



LONGITUDINAL SECTION THROUGH TEST CELLS

TEST CELL has air intake at one end (right), exhaust at the other end. The augmenter and the stack are exposed to intensely hot high-speed air blasts.

were taken down fast—in less than 30 minutes. Usually, forms were removed 4 to 8 hours after casting.

To keep the concrete as cool as possible, forms were sprayed with cold water before, during and after casting the concrete. Prompt stripping permitted early resumption of effective cooling and start of wet curing.

• **Strength varies with weather**—Cold-weather conditions—17 F air and 35 F mix temperatures—resulted in the strongest concrete. These low temperatures kept down the heat of hydration, which, if greater than 100 F, reduces the ultimate strength of the concrete.

But as the weather grew warmer, it was discovered that strengths fell off seriously to 2,500 psi, as determined by core tests. Studies showed that the high rate of heat of hydration and consequent temperature rise "burned out" the concrete in interior sections. This meant that "thin-wall" sections —8 to 12 in. thick—were actually acting like the mass concrete in dams.

Somewhat alarmed at this, the contractor's men, with the engineer's blessing, decided to adjust the methods of cooling and curing to attain proper ultimate strengths during hot-weather concreting.

Results of carefully supervised field studies led to the following rules.

(1) Cool aggregates by spraying water over them from a system of fine sprays. Evaporation keeps temperature down. Aggregates should also be shaded.

(2) Store aluminous cement out of the sun.

(3) Do not mix the concrete during sunlight hours.

(4) Precool the mixer.

(5) Place concrete during the cooler seasons. (After September, the ultimate strength jumped at least 2,000 2,000 psi.)

(6) Use cool mixing water. Ice cubes may be added. This alone isn't too effective, but it can help. Refrigeration is considered too expensive but would be worthwhile.

(7) In curing the concrete, apply cool water and distribute it evenly over the hardening surfaces.

(8) Cool construction equipment. It draws heat.

(9) Precool the forms. This is particularly effective if they are steel, as at Lockland. Precooling of forms is best done by water running over them inside and out. Gentle sprays aren't too effective. Keep forms and concrete cool during pouring and for at least the first 24 hours of curing.

• **Internal heat reduced**—To draw off the heat of hydration imprisoned in the central areas of wall sections, thin-wall tubes on 6-in. centers were incorporated in the center of the sections parallel to and between vertical reinforcing bars.

Cool water flowed upward through this pipework continuously for 24 hours. It was successful in drawing off excess heat and in permitting the concrete to develop the required ultimate strength under hot-weather conditions.

The tubes were grouted full after the wall sections were cured.

Using cooling water flowing upward from a header through the wall sections had an added advantage. As it left the top of the built-in pipes, it flowed down the sides of the wall section, providing additional cooling. Also, fixed sprays were carefully set to cover every inch of the exposed surface, inside and out.

• **Components precast**—When the project started, poured-in-place sections were tried. It was soon found that precasting was preferable because of superior control of concreting and more effective cooling and curing. Hence, both the 24-ton rectangular sections that make up the exhaust stack proper, and the 18-ton cylindical "augmenters" that convey jet-engine blast directly to the stack, were precast.

These huge precast sections were made with openings through which slings could be threaded for handling them. The sections were lifted from the forms after 24 hours by a crane and transferred to a flat truck. At the job site, another heavy crane assembled the sections to form the stack.

Sections have two types of joints: shiplap, which is grouted with aluminous cement-Haydite mortar to form a monolith; and flat joints, which are filled with asbestos cloth and glass fibers to act as expansion joints and gaskets. The latter joints are covered with a sheet-metal strip bolted to the concrete.

• **Concrete blocks lessen sound**—Jet engines under factory test attain high noise levels. These are reduced by a honeycomb of aluminous—cement blocks of the same shape as common concrete blocks. The honeycomb is located at the base section of the stack, with the openings facing the engine exhaust. The grid is 16 ft deep and about 15 ft square.

Mixing and fabrication of the blocks were similar to that for common concrete block except for the curing. The aluminous-cement blocks must be cured without steam at temperatures less than 80 F. Atomizing sprays were employed to produce an enveloping fog around the units for at least 24 hours after they were put in the curing room (as soon as possible after manufacture). The fog supplied at least ¼ gal of water per hour per block. Ultimate strengths of the blocks were 1,600 psi on the gross area, or 2,900 psi on the net area.

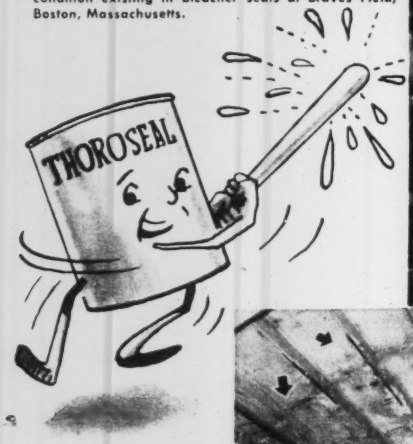
• **The team**—The General Electric Realty Corp. directed the project. In charge for the General Electric Co. was T. L. Bray, and for the General Electric Realty Corp., J. B. Austin, project manager.

Jackson and Moreland, Boston, Mass., were consulting engineers, with A. Y. Taylor as project engineer and Oliver G. Julian as structural engineer. Duffy Construction Corp. was the contractor; the work was under the supervision of Frank Duffy, president, and T. F. Keller, project manager. The materials technologist was Herman H. Protze.

THOROSEAL SCORES ANOTHER HOME RUN at the Braves Field

General contractor and technical supervisor of Standard Dry Wall Products, Inc., plan correction of an extreme condition existing in bleacher seats at Braves Field, Boston, Massachusetts.

Above photograph shows THOROSEAL FOUNDATION COATING being grouted into upper, or wearing, surface of bleacher seats.



Right photograph shows soffits of concrete seats where concrete has blistered away from reinforcing rods. Rods were sand-blasted and sealed with THORITE Patching Mortar and entire undersurface sealed with THOROSEAL.

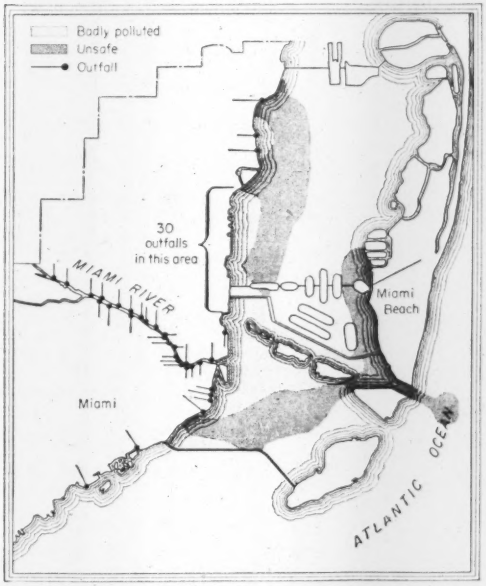
General contractor, Henry Gironi, Allston, Massachusetts, an expert, with long experience in masonry maintenance, rehabilitation and surface protection, performs correction task on Braves Field, with satisfaction to all concerned. Waterproofing Products, Inc., Allston, Massachusetts, furnished the materials.

THORITE Patching Mortar was used for sealing rods and patching cracks and blisters in concrete. THOROSEAL FOUNDATION COATING was used for grouting wearing surfaces.

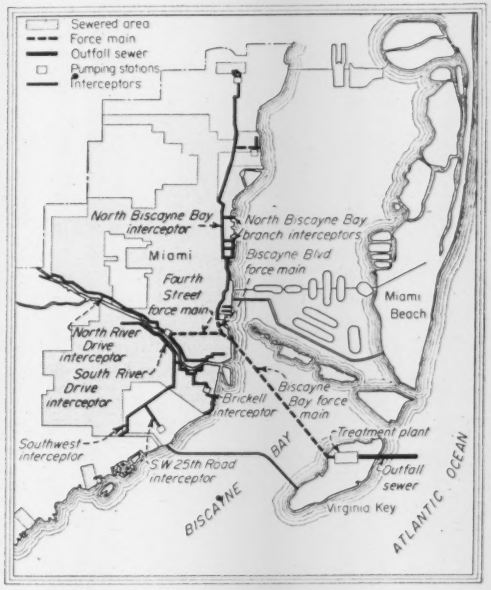
"HOW TO DO IT." Get our new 20-PAGE BROCHURE, with designer's guide. Pictorially described, in detail

Standard Dry Wall Products 40th YEAR

NEW EAGLE, PENNSYLVANIA



PROBLEM was posed by this steadily increasing area of pollution due to the outfalls of raw sewage into Biscayne Bay.



SOLUTION, at a cost of $27 million, is this system of interceptors and force mains to treatment plant on Virginia Key.

Miami voters sanction sewage system construction

By a 4½-to-1 majority at the polls May 27, Miami property owners have given city officials a mandate to spend $27 million to end the dumping of raw sewage in Biscayne Bay.

Miami freeholders voted 39,442 to 7,038 for a $16-million bond issue for the construction of an underwater pressure sewer across the bay to Virginia Key, a sewage treatment plant on the key, and an underwater outfall sewer 4,500 feet out into the Atlantic.

Approval of the tax-supported bonds was also tacit approval of an additional $11 million in revenue bonds, this money to be used for the construction of interceptor sewers and pumping stations on the mainland.

The $16-million bond issue will cost every property owner in Miami an additional $2.04 per $1,000 of assessed valuation a year and the $11-million revenue issue will mean a 100% surcharge on the water bills of all users of the sewer system.

The vote was a clear indication that property owners weren't counting the cost. They saw eye-to-eye with Miami newspapers, the medical association and officials who campaigned for the bond issue with the slogan, "It's time to abolish the open cesspool in our front yard."

• **Plans**—Plans for the work to be done have already been drawn. They were completed in February by Miami Sewer Project Associates, Inc., composed of three engineering firms: Rader Knappen Tippetts, Metcalf & Eddy, and Maurice H. Connell and Associates, Inc.

As soon as the votes were tallied, Mayor Chelsie Senerchia announced that construction would begin as soon as the bonds could be sold, bids called and contracts let. Since all of the preliminary work necessary for sale of the bonds has been done, Senerchia said, he believed work could be under way before Christmas.

Miami's present sewer system serves only about 55% of the city's 246,983 residents (1950 census). The other residents make use of septic tanks.

The sewer system dumps an estimated 47 mgd of raw sewage into Biscayne Bay and the Miami River through 70 outfalls. After a pollution survey of the bay and river, the Florida State Board of Health reached these conclusions:

• "The entire bay area on the Miami side from south of the Miami River northward to 79th Street and east to beyond the Intracoastal Waterway is grossly polluted.

Engineers cost estimate

1. Intercepting sewers & force mains	$6,900,000
2. Sewage pumping stations	3,800,000x
3. Biscayne Bay force main	3,200,000
4. Sewage treatment plant	11,000,000
5. Virginia Key outfall sewer	1,800,000
	$26,700,000

x—Includes items of $200,000 supplied by the City of Miami for land acquisition.

These costs include construction, contingencies, engineering, legal and financing expenses, but not interest during construction.

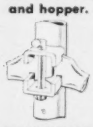
NOW A LOW-COST LIGHT-WEIGHT PANEL TYPE TOWER

FASTER, EASIER TO ERECT
Highly portable, all parts can be carried by one man (except bucket and hopper) — easily erected in confined spaces. 3 men + 1 hour = 50 ft. working tower.

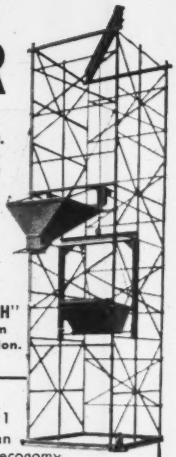
LOWER INITIAL COST
Specially designed to meet the demand for an all-around, inexpensive tower.

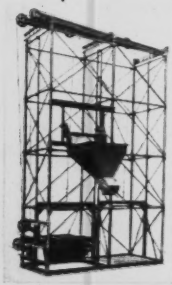
MINIMUM BOLTING
Panel design includes built-in guide rails — braces and girts are quickly attached with Economy-Notch, eliminating bolts, loose parts and clamps.

3,000 Lb. Capacity
117 Ft. Max. Height.
With cage platform or concrete bucket and hopper.



"ECONOMY NOTCH"
Locking Mechanism
Simplified, fast erection.





AMERICAN-TUBULAR The #1

Name in Elevating Towers for more than a quarter century, offers contractors economy, long life, and dependability. Both Single and Double-Well models available with platform cage or concrete handling equipment.

	CAPACITY	HEIGHT	CAGE CAPACITY
Heavy	5,000 lbs.	Unlimited	3 Wheelbarrows or
Light	3,000 lbs.	201 ft.	2 Concrete Carts

Write for Complete Descriptive Catalogs

DISTRIBUTORS THROUGHOUT THE COUNTRY—SALES AND RENTAL STOCKS

AMERICAN-TUBULAR ELEVATOR CO.

DIVISION OF UNIVERSAL MANUFACTURING CORP.
350 NORTH STREET • ZELIENOPLE (Pittsburgh District), PA.

NEW ACCURACY AND ECONOMY WITH THIS
GLEDHILL
TRAFFIC LINE MARKER

THE LOWEST PRICED, COMPLETE, SELF-PROPELLED MARKER ON THE MARKET

Clean line edges uniform paint distribution, unusually good maneuverability plus wide flexibility in application lend further distinction to this trim looking marker.

Packed within its 7' width and 16' length you'll find features that you've dreamed about in a marker. Send for complete specifications and prices!

Another top performer joins the ranks of the well-known blue Gledhill snowplows, graders and other road working equipment.

THE GLEDHILL ROAD MACHINERY CO.
GALION . OHIO

MUNICIPAL

• "The river acts simply as an open sewer to carry the sewage down to the bay.

• "Diluted sewage is getting out into the ocean through Government Cut (ship channel) and presents a hazard to the bathing beaches. This sewage is also polluting the Miami Beach side of the bay. During ebb tide, the main ship channel acts as an open sewer in transporting sewage to the ocean.

• "Swimming, boating, water skiing, shellfish gathering, etc. are unsafe activities in these grossly polluted areas.

• "These situations will continue to deteriorate and to further threaten public health, economic, aesthetic, recreational, and commercial activities within the metropolitan area unless active steps are promptly taken to abate the pollution."

• **Collecting and treating**—The $27-million project provides for a system of interceptor sewers to collect all sewage of the city and deliver it to two main pumping stations. One will be located east of Biscayne Boulevard near N.E. Ninth St. and the other near the Miami River in the vicinity of N.W. Fourth St.

These pumping stations will discharge the sewage through a 72-in. force main extending 14,353 ft to Virginia Key. Sewage will be prechlorinated at each pumping station.

To collect sewage from that portion of Miami now provided with sewers, 16 miles of principal interceptors will be required. And provision is made in the plans for extending these interceptors to outlying districts as the construction of additional local sewers make such extensions necessary.

The two pumping stations will have identical equipment. Mechanically cleaned bar racks will be installed ahead of the wet well to protect the pumps. Solids removed by the racks will be ground and returned to the sewage.

Each station will contain—initially—five vertical motor-driven sewage pumps installed in dry wells below the level of the sewage in the wet wells so as to be self-priming. The motors and electrical control equipment will be installed on the main floor above ground. Three of the pumps in each station can also be driven by auxiliary high-speed diesel engines which will be provided for standby and peak-load service. During periods of power failure, electricty for lighting and auxiliary equipment will be furnished

by diesel engine-driven generator sets.

Increased capacity can be obtained when required by installing new impellers in each pump.

• **Lifting sewage**—Four small pumping stations will be required for lifting sewage from low-flying areas into the interceptors. Each of these will include comminutors for grinding rags and solids without removal from the sewage and the necessary number of automatically controlled vertical electric motor driven pumping units installed in dry wells.

The treatment plant is designed for an average flow of 47 mgd and a maximum flow of 153 mgd. It will be a high-rate activated sludge plant with separate digestion of sludge followed by dewatering and incineration.

Provision can be made for the future production of fertilizer, should such production become economically justified.

The plant outfall will be 1,250 ft of 108-in. pipe on land and 4,630 ft of 90-in. pipe beneath the ocean. Special precast multiple outlets will disperse the plant effluent in 18 ft of water.

The engineers estimate that the project can be completed in about 3½ years from the start of construction.

An estimate has been made of the cost of administration, operation, maintenance, repairs and renewals of the sewage collection and disposal system.

Operating costs	
1. Administration, etc.	$20,000
2. Intercepting sewers & force mains	
Maintenance & repair	10,000
3. Sewage pumping stations	
Power	39,000
Fuel & oil	1,000
Maintenance & repairs	9,000
Renewals	14,000
Misc. supplies & expenses	3,000
Labor	45,000
4. Sewage treatment plant	
Power	15,800
Fuel & oil	7,000
Maintenance & repairs	18,900
Renewals	30,700
Misc. supplies & expenses	15,800
Chemicals	44,400
Labor	176,400
5. Biscayne Bay force main and outfall	
Maintenance & repairs	8,000
Total, First year of operation	**$458,000**

(*Municipal continued on page 55*)

Radio helps contractor double work output!

MANY a small contractor finds he can squeeze more profit out of a working day by using G-E 2-way radio to eliminate waste motion. For example: Al Spade of Rochester, N. Y. contracts municipal paving, hauling and snow removal jobs. From their home, his foreman's wife operates the transmitter like a telephone, relaying radio messages and instructions between work crews spread miles apart.

For less than the cost of a truck, this contractor installed a complete G-E communication system that helps him double the number of jobs he can handle efficiently. Mail coupon below for details on similar savings for your operation.

"In snow removal", reports contractor Al Spade, "we do in five hours what would require eight without mobile radio."

With a small crew, 2-way radio control permits fast switching of trucks between jobs with a minimum of waste mileage.

How Much Does *Instant Communication* Mean To Your Business?

General Electric Company, Section 2262-12
Electronics Park, Syracuse, New York

Please tell me how General Electric 2-way radio can help me.

NAME_____

TYPE OF BUSINESS_____

ADDRESS_____

CITY_____ STATE_____

GENERAL ELECTRIC

Next!

Listen to men who own Internationals and we think you'll be the next to own one.

An International is engineered to breeze through your toughest jobs, at less cost, in greater comfort. It's engineered to last longer and make you more money.

So see your International Truck Dealer or Branch. You'll quickly learn why performance and economy make Internationals the pride of owners everywhere. Come in. *Soon?*

INTERNATIONAL HARVESTER COMPANY · CHICAGO

Why settle for less than these International exclusives?

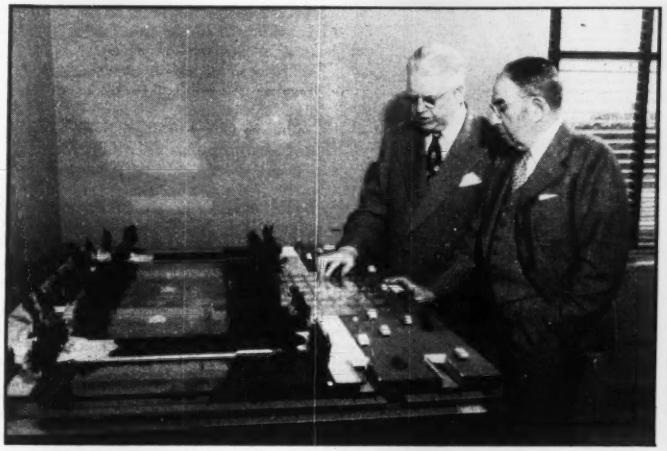
- All-truck engines—exclusively for truck work—built in the world's largest exclusive truck engine plant.
- The "roomiest, most comfortable cab on the road"—the Comfo-Vision Cab designed by drivers for drivers.
- Super-steering system—more positive control, easier handling, 37° turning angle for maximum maneuverability.
- The traditional truck toughness that has kept International first in heavy-duty truck sales for 20 straight years.
- The truck engineered for your job, selected from the world's most complete line . . . 115 basic models, from ½-ton pickups to 90,000 lbs. GVW ratings.
- America's largest exclusive truck service organization.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers

INTERNATIONAL TRUCKS

"Standard of the Highway"

The International L-160 series offers GVW ratings from 14,000 to 16,500 lbs., a wide variety of specialized bodies.



MODEL OF UNDERGROUND GARAGES which will be built on Chicago's lake front is examined by James H. Gately (left) President of CPD and Ralph H. Burke, designer of project.

Chicago digs for parking problem

Despite the words of some experts (see p. 56) that municipalities will not make the expensive effort involved in solving the congestion problem some cities were moving toward solution.

In Chicago plans for the construction of an underground garage (the second) were under way.

Boston's Common garage ran into difficulty and for the sixth time the option on building had to be extended.

In New York City a plan to require new buildings and some old structures to provide off-street loading berths was approved by the planning commission.

• **Chicago garage**—The Chicago Park District has approved plans for the construction of a second underground garage in Grant Park, on the lake front.

Park district lawyers are writing an ordinance for the sale of $13.4 million of revenue bonds to finance the construction. The bonds will be retired from revenues received from storage fees.

One garage, previously approved, will be built under Michigan avenue and Grant Park, west to the Illinois Central Railroad right-of-way. The second will be constructed under Michigan Avenue and the Congress Street Plaza between Van Buren and Harrison streets. Together they will have a total storage capacity of 4,219 automobiles.

The legal obstacles to this program were cleared on May 22 when the Illinois Supreme Court upheld the validity of the state law authorizing the district to issue revenue bonds to finance the construction.

The garages will be constructed of reinforced concrete and will have two levels. Descending and ascending ramps in Michigan Avenue will enable motorists to reach the garages. Work is planned to start next fall and construction is expected to be finished in 1954.

• **Boston problem**—At the request of Governor Paul A. Dever of Massachusetts, Mayor Hynes, of Boston, on May 29, extended until Dec. 1 the option of Motor Park, Inc., to build a 3,500-car garage under the famous Common of the Hub City.

The company has received six extensions of the option since July 11, 1946 owing to difficulty in financing the estimated $10-million project.

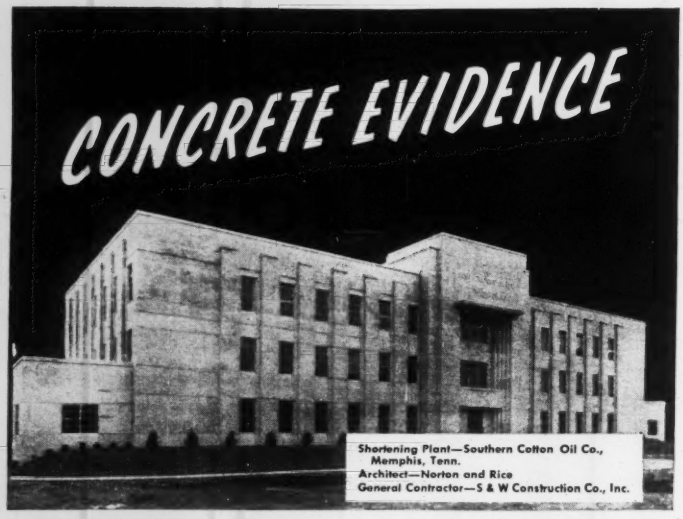
The current option expired June 1. Gov. Dever indicated that prospects are favorable for completion of financial arrangements before 1953. Mayor Hynes said that he wanted the garage built as soon as possible as a relief to traffic congestion.

The mayor pointed out that Motor Park has already invested a substantial sum in preliminary work.

Any other group, he said, would need more than another six months to complete such preliminaries.

• **Loading berths**—The New York City planning commission last month ap-

dewater
the
Complete
way
THE COMPLETE WELLPOINT IS SELF JETTING
"Complete's" patented wellpoints give you compactness, simplicity, lightness and Strength. Keep wet work bone dry when other methods fail. Write or wire for estimates, and engineering consultation.
Don't Gamble with costly water hazards . . . get "COMPLETE" and get results!
Write today for "Complete" catalog Dept. ER
COMPLETE MACHINERY & EQUIPMENT COMPANY, INC.
36-40 11th STREET
LONG ISLAND CITY, N. Y.
PLETE
WELLPOINT
SYSTEMS
FOR SALE OR RENT



Shortening Plant—Southern Cotton Oil Co., Memphis, Tenn.
Architect—Norton and Rice
General Contractor—S & W Construction Co., Inc.

MASONITE CONCRETE FORM PRESDWOOD FOR SMOOTH, LOW-COST EXTERIORS!

You'd think that days of hard rubbing were required to create this super-smooth concrete surface. But, by using Masonite Concrete Form Presdwood®, the contractor created a clean exterior surface, ready for painting, without expensive facing or hand finishing. Grainless, all-wood Concrete Form Presdwood saves time and cuts costs on concrete construction all over the country. Here's why:

Here's what the Contractor Says:

S&W CONSTRUCTION COMPANY
MEMPHIS 2, TENNESSEE
April 17, 1952

Masonite Corporation
111 West Washington Street
Chicago 2, Illinois

Dear Tom:

On the Shortening Plant which we built in Memphis for the Southern Cotton Oil Company, we used Masonite Concrete Form Presdwood for the entire exterior as well as for all interior walls and ceilings.

Everyone involved was very pleased with the smooth, clean appearance of the exterior. It gives the effect of having a much more expensive facing.

This is one of the many jobs we have built with the help of your forming material. We have been using it continuously since 1936, with excellent results.

Very truly yours,
S & W CONSTRUCTION COMPANY, INC.,
Erich R. Schmied
President

- Can be used again and again.
- Low first cost—low cost per use.
- Grainless—won't split, splinter or crack.
- Fewer joints—large panels, 4' x 8' or 4' x 12'.
- Can be curved for arches, columns, etc.
- Easily worked with carpentry tools.
- Insures complete, uniform hydration.

The handy coupon below will bring you complete information.

MASONITE® CORPORATION
Dept. ENR-612, Box 777, Chicago 90, Ill.

"Masonite" signifies that Masonite Corporation is the source of the product

Please send me your new brochure on Masonite Concrete Form Presdwood.

Name.....
Firm.....
Address.....
City and Zone.....*State*.....

Better Hardboards for Better Concrete

MUNICIPAL

proved two amendments to the zoning law which would require some structures to provide off-street space for loading and unloading of trucks. Both measures are subject to Board of Estimate approval.

The first amendment requires almost all new non-residential structures to build at least one off-street loading berth.

The second amendment requires all existing large buildings used for retail, wholesale, manufacturing and storage purposes to install berths for trucks not later than July 1, 1957.

In a formal report to the Board of Estimate, Col. John J. Bennett, chairman of the planning commission, noted that the amendments are the latest in a series dealing with the traffic congestion problem.

"In commercial and manufacturing areas," he said, "a major factor in traffic congestion is the widespread practice of loading and unloading trucks across the sidewalk because of the lack of off-street loading berths. Frequently such trucks park at an angle to the curb and extend part way across the street."

Heart of the problem

The downtown business districts of American cities may soon become "ghost towns," warned Theodore M. Matson, director of Yale University's bureau of highway traffic.

Matson said that a city's central business district is dependent on the number of people which can conveniently shop in that area.

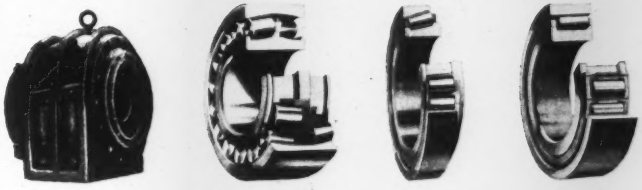
"Nationally-known brands, of course, are sold in all areas—in business centers as well as in the suburbs," Matson said. "But non-standardized and luxury items tend to remain in downtown shopping districts and for the moment, the central area serves an important function in a community's economy despite the inroads of suburban competition."

Matson added that all cities exist largely because of their strategic location on routes of travel and that while transportation alone cannot make a city, a city cannot exist without it.

The heart of the problem lies in the fact that 70% of travel to business districts is made by private automobile, he said.

Then he pointed out that congestion remedy is costly and local governments are reluctant to make any moves. He doubted that really strong measures would be taken to relieve the congestion.

designed for harmony...



Torrington engineers have a thorough knowledge of the friction problems encountered in virtually every type of mechanical equipment. And they have had many years of experience with *all* types of anti-friction bearings. They are able to give sound, unbiased recommendations for the bearings best suited for the job at hand. Result: a harmonious blending of anti-friction bearing types with the products in which they are used.

Torrington engineers will be glad to help you—as they have many others—to select the bearings which will assure your products smooth, dependable operation.

THE TORRINGTON COMPANY

South Bend 21, Ind. Torrington, Conn.

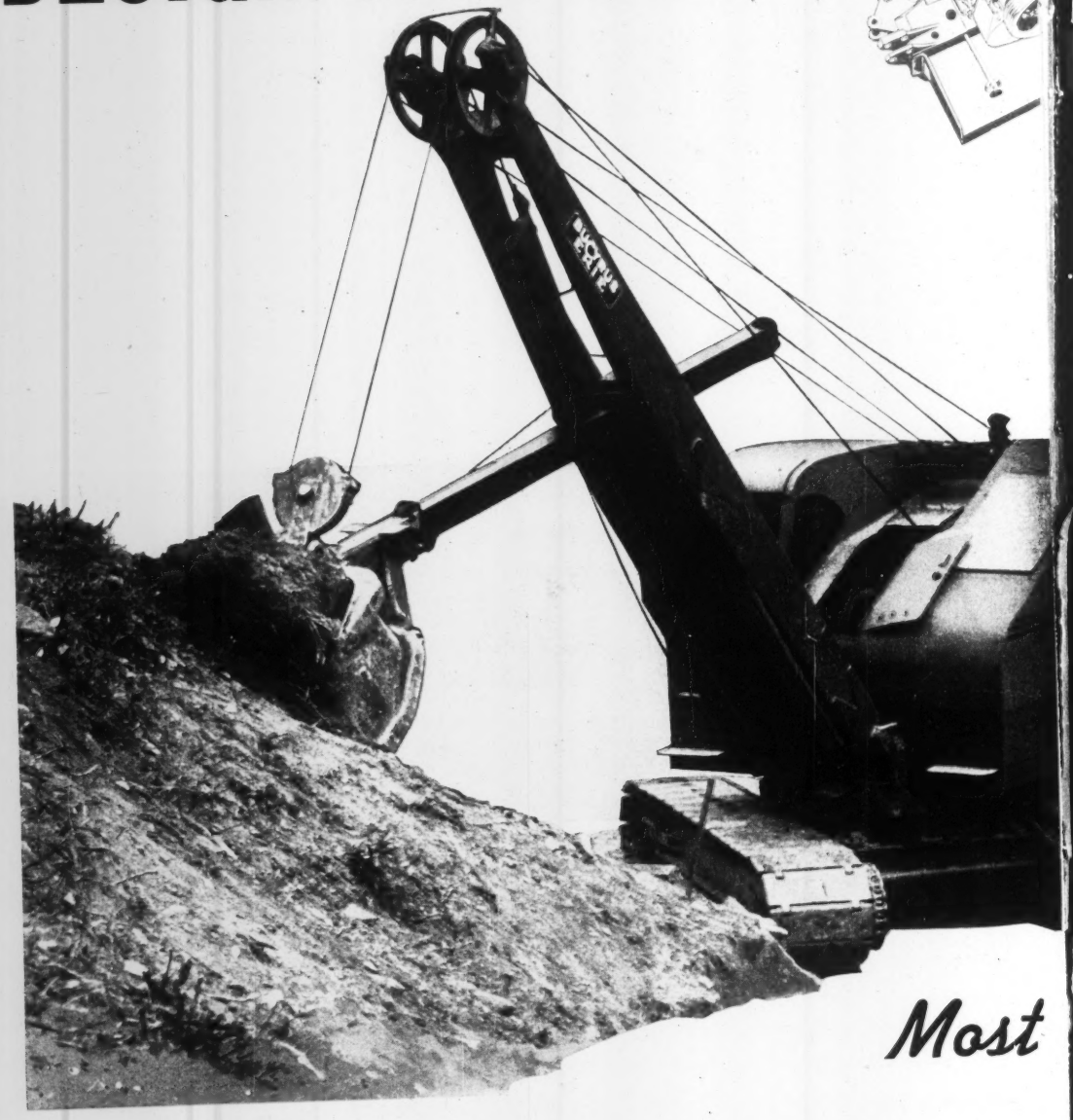
District Offices and Distributors in Principal Cities of United States and Canada

TORRINGTON BEARINGS

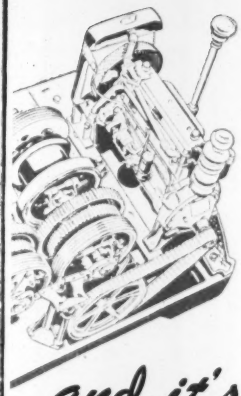
Spherical Roller • Tapered Roller • Straight Roller • Needle • Ball • Needle Rollers

Now...

DESIGN SIMPLICITY



Most



counts more than ever . . .

and it's yours with BUCYRUS ERIE *excavators*

From boom point to treads, the advanced engineering of Bucyrus-Erie excavators shows up in neat simplicity all along the line. They're trim and compact, have no excess weight; this means easy handling, fast operating. With lightness they combine great strength; this means low maintenance, real dependability. Machinery is conveniently arranged, accessible; this means it's easy to keep a Bucyrus-Erie in top working condition.

This basic design simplicity pays you extra dividends in big output and long service life. Today, with critical materials for new equipment in short supply, that's more important than ever.

56E52C

HOW TO MAKE YOUR EXCAVATOR WORK HARDER . . . LAST LONGER

Write now for a new 32-page booklet loaded with valuable hints on:

- **Preventive Maintenance**
- **Lubrication**
- **Adjustments**
- **Engine Care**
- **Safety . . . and many other important topics**

BUCYRUS-ERIE

SOUTH MILWAUKEE, WISCONSIN

¾-TO-4 YD. GASOLINE, DIESEL, SINGLE-MOTOR ELECTRIC EXCAVATORS
HYDROCRANE-HYDROHOE

Compared - Most Preferred

15 opportunities to cut costs with LaCROSSE

If you operate any of the 15 types of equipment listed at right, you'll be time and money ahead with a dependable La Crosse trailer. Saves up to 4 hrs. waiting time for a rental unit on every move . . . permits better scheduling of work . . . keeps major equipment and crews busy for higher earnings. There's a job-proved La Crosse trailer for every hauling need—6 to 67 tons capacity . . . single, dual or tandem axle . . . flat, drop or tilting platform. Write today for free literature, prices and delivery information.

LC-23

- ☐ Asphalt Finishers
- ☐ Bulldozers
- ☐ Cranes
- ☐ Excavators
- ☐ Generators
- ☐ Graders
- ☐ Hoist Equipment
- ☐ Pavers
- ☐ Rippers
- ☐ Rollers
- ☐ Snow Plows
- ☐ Stationary Machy.
- ☐ Transformers
- ☐ Trenchers
- ☐ Tool Houses

Check Today!

LA CROSSE TRAILER CORPORATION, La Crosse, Wis.

☐ Rush complete information on La Crosse trailers:
☐ Specifications ☐ Prices ☐ Delivery
☐ Send name of nearest La Crosse Distributor.
☐ We may buy a ..... ton trailer about ..... (date)

Name.....Title.....
Employed by.....
Address.....
City.....State.....

LaCROSSE
America's Favorite LOW BED TRAILER

MUNICIPAL

Plan costly improvements for Manhattan Bridge

New York City's venerable Manhattan bridge between Brooklyn and Manhattan will undergo reconstruction to relieve present excessive maintenance charges. A preliminary $80,000 survey to determine necessary improvements will be the first step of the anticipated program that "may cost millions of dollars" according to Abraham D. Beame, the city's budget director.

A contract for the survey has been let to D. B. Steinman, consulting engineer, who drew the plans for the recent $7-million repairs to the Brooklyn Bridge, another of the East River crossings (ENR Oct. 25, p53).

Because loads have been increasing constantly since the Manhattan Bridge was built in 1909, maintenance costs are "higher than they should be," Frederick H. Zurmuhlen, commissioner of public works, points out. About $2½-million has been spent in the last 20 years, a considerably larger amount than required for the other similar Brooklyn-to-Manhattan bridges.

• **Remedy**—In an attempt to remedy the situation, Steinman has been directed to analyze unsymmetrical loadings and deflections, and to study the condition of anchorages, saddles, cables, bands and supporting brackets at the towers.

At present, Manhattan Bridge has two traffic levels. On the lower is a 35-ft roadway flanked on both sides by a pair of subway tracks. There are also pedestrian walks on the outside, each 13½ ft wide. Directly above each 26-ft width of subway track are roadways for passenger cars only.

The bridge has a main span of 1,470 ft. The distance from towers to abutments at each end is 725 ft.

City engineers believe the excessive repair costs are caused by unsymmetrical loadings. These are due mainly to the heavy subway trains, most of which use the north pair of tracks. One possible solution is to move the subway tracks to the center.

Another contemplated improvement is to strengthen the upper roadways so they can carry heavy trucks.

"Even though the bridge today is carrying loads far greater than could have been visualized by its designers," said Zurmuhlen, "it is perfectly safe." Perhaps the designers hadn't visualized modern heavy conveyances, but they certainly allowed for them. In 1905, when calculations were being

(Continued on page 62)

Bitumuls makes shell and coral suitable for paving

NEPTUNE'S CAST-OFFS—from Gulf Coast oyster and clam shell to South Pacific coral—are made into good paving material with BITUMULS® by economy minded road-builders. This cellular aggregate entraps water which is miscible only with aqueous asphaltic emulsions.

Bitumuls mixes easily with virtually every type of shell or coral to give proved paving materials for new construction—highway maintenance—surfacing work.

Bitumuls low-cost cold mix, made at stationary plants or on the road, can be placed under nearly all traffic and climatic conditions.

Bitumuls Mixing Grades are ideal for mixing with all available aggregates. Medium Viscosity grades are favored for penetration macadam work. High Viscosity Bitumuls is standard for surface treatments and seal coats. Both are quick-setting grades. Both provide long-lasting performance.

Our engineers work out of strategically-located plants nation-wide. These men are specialists, qualified by training and varied experience to consult with you, about your paving needs: roads, parking areas or airports.

Bitumuls is always ready for prompt delivery to your job site.

AMERICAN
Bitumuls & Asphalt
COMPANY

200 BUSH ST. • SAN FRANCISCO 4, CALIFORNIA

Proivdence 14, R. I. Perth Amboy, N. J. Baltimore 3, Md. Salisbury, N. C. Columbus 15, Ohio
St. Louis 17, Mo. Mobile, Ala. Baton Rouge 2, La. Tucson, Ariz. Inglewood, Calif.
Oakland 1, Calif. Portland 7, Ore. Seattle, Wash. Washington 6, D. C. San Juan 23, P. R.

MANUFACTURERS OF ASPHALT AND ASPHALTIC PRODUCTS

Heltzel BUILDS IT BETTER

HELTZEL HELPS
CONSTRUCTION DOLLARS
GO FURTHER

with
RAYMOND CONCRETE
PILE COMPANY
at
GREAT LAKES
STEEL
CORPORATION

PROBLEM: High capacity batch plant to simultaneously charge both a pumpcrete operation and a fleet of transit mix trucks.

ANSWER: Heltzel engineered batch plant that worked both pumpcrete and transit mix operations with practical perfection and helped Raymond Concrete Pile Company run ahead of schedule.

●The installation consists of a basic Heltzel 300-ton, 4-compartment plant (three 70-ton aggregate compartments; one 311-bbl. cement compartment); a 70′ high, 250-bbl. per hour bulk cement elevator; a 1000-bbl. bulk cement recirculator with 33′ 6″ screw conveyor; a 2-cubic yard batcher to charge two tilt mixers—front end charging; special columns and braces to take care of height.

ASK FOR HELTZEL BULLETIN K-37 DESCRIBING PLANTS AND ENGINEERING SERVICE FOR CENTRAL MIX, TRANSIT MIX AND CONCRETE PRODUCTS OPERATIONS.

Heltzel BUILDS IT BETTER
The Heltzel Steel Form & Iron Company
Construction Equipment Since 1910
WARREN, OHIO
Flex-Plane

MUNICIPAL

made, the heaviest line load was estimated at 6,930 lb per ft. Yet, the main span was designed for 18,300 lb per ft. The present line load is 13,210 lb per ft.

$40-million bridge hearing produces much controversy

A U. S. Engineer hearing last week on a proposed Mississippi River bridge produced an almost unanimous agreement on the necessity of a bridge in the New Orleans area.

There was no agreement, however, on the extent of the hazard that will be created by the bridge under consideration. Shipping, civic and military interests hold widely differing views.

The meeting was called by the Engineers to consider a request submitted by the State Department of Highways for a permit authorizing bridge construction connecting New Orleans with the west bank.

C. W. Hanson, partner in the firm of Masters and Henderlite, consulting engineers, outlined specifications of the bridge.

It would be 2,400 ft in overall length, with the horizontal clearance for the channel span of 1,156 ft. Within the central 750-ft section of the center span, the minimum vertical clearance would be 135 ft at high water, 155 ft at low water. One of the two piers in the channel will be out about 700 ft from the Crato St. wharf. The other pier would be 230 ft from the west bank levee.

• **Cost and alternatives**—Mayor De Lesseps Morrison said that the estimated cost of the structure would be slightly in excess of $40 million. The bridge could be financed by toll charges, he said. The mayor described alternative structures.

Speaking of previous plans for a bridge extending from Calliope St. to the Algiers side, he called it completely beyond reach. He said it would cost $61 million, or $21 million more than the bridge under consideration. He noted that a tunnel across the river would cost $93 million.

"The bridge as now proposed is an absolute necessity for our city," he declared. "If approved, we can let the contract for the foundation before the end of 1952, and we can be using the structure by the end of 1956."

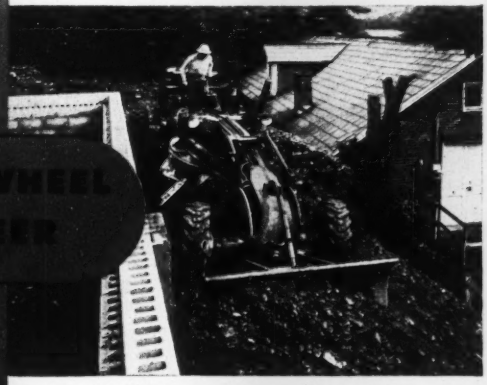
• **Objections**—Much of the controversy revolved about the piers which are out in the river channel. Opponents insisted that the hazards of these two piers to navigation were immense.

(Continued on page 64)

Like Mules and Canyon Trails . . .

they Go Together

Power in the front drivers makes it safe to bulldoze headfirst down a steep slope . . . easy to back-up for another load.



Starting to straighten out after making the turn . . . rear steer keeps its end of the Grader out of danger.

Yes, All-Wheel Drive and All-Wheel Steer go together... work together... on every job. Take the matchless traction and power-at-the-blade of All-Wheel Drive; add the superb maneuverability of All-Wheel Steer and you get Controlled Traction, which moves more material . . . of any kind . . . farther and faster.

Why be satisfied with less in a motor grader?

AUSTIN-WESTERN COMPANY · *Subsidiary of Baldwin-Lima-Hamilton Corporation* · **AURORA, ILLINOIS, U.S.A.**

Austin-Western

BALDWIN BLH LIMA-HAMILTON

Now you can Speed Up Work—and

SAVE COSTLY DRAFTING TIME

with the

AMAZING NEW OZAMATIC!

New Compact OZAMATIC Does Everything Any Ozalid Machine Can Do in Copying Originals Up to 16" Wide.

Here's How Others Are Using Ozalid To Get Jobs Done Faster... With Less Drafting Time!

A Huge Auto Plant*—Ozalid is saving an estimated 840 man-months of drafting time, and is speeding up the job of changing over large plant areas from auto to aircraft production!

A Major Airline*—Ozalid copies of engineering drawings, wiring diagrams and charts make tremendous savings in drafting time.

A Famous Home Builder*—Ozalid prints of topographic maps, general and detailed housing construction plans save drafting time, speed up work.

An Air Conditioning Firm*—"Ozalid does the work of fifteen extra draftsmen" they report.

ONLY OZALID OFFERS THESE "EXTRAS"

1. Greatest background of experience in building and operating diazo process equipment.
2. Faster service and fresher materials because of nation-wide coverage by distributors.
3. Fine, dependable paper that is the "Standard of Quality" among all diazo-sensitized materials.

Find out today how the Ozalid process can break through bottlenecks and save costly drafting time in your own operations. For full details on the amazing savings made possible by OZAMATIC (or a larger machine), write today (Dept. ER-5)—Or call the Ozalid distributor listed in the classified pages of your phone book.

*Names and details on request.

CUT COPYING COSTS . . . USE OZALID

Johnson City, New York.

A Division of General Aniline & Film Corporation. "*From Research to Reality.*"

Ozalid in Canada—Hughes Owens., Ltd., Montreal.

Some expressed the view that a crash of oil-laden ships would cause a fire.

Proponents of the bridge conceded the danger, but they described it as a calculated hazard and less hazardous than the movement of ferries at all hours of the day and night.

A secondary objection, stressed by the dock board, was to the provision for a center span with 135 ft clearance at high water. The board cited clearances of other major bridges in excess of that figure, and pointed out that completion of the proposed tidewater channel to the Gulf would invite the largest vessels afloat to enter the port.

"Nothing should be permitted to interfere with the full utilization of the port facilities," the board said.

3rd tunnel tube approved as approach fight ends

Representatives of New York City, including Robert Moses, have reached a settlement with the Port of New York Authority concerning Manhattan approaches for a third tube in the Lincoln Tunnel (ENR March 15, 1951 p. 26). The fight has blocked construction more than a year.

A memorandum was made public from a special committee appointed March 19 to seek an end to the controversy. If the Board of Estimate approves an agreement by the Port Authority to build additional connections to the tunnel once yearly traffic exceeds 30 million vehicles, construction can proceed.

When the third tube was proposed it was estimated that it would take about five years, cost $85 million.

Traffic is expected to reach 26 million vehicles by 1956.

City approval had been withheld on the ground that proposed connections with Manhattan streets were inadequate. Moses, Construction Coordinator for the city, suggested that the authority pay some of the cost of building an express highway across the island at 30th Street. The authority flatly refused to have any part of the 30th Street project.

• **Solution**—When traffic reaches 30 million vehicles a year through the expanded tunnel, Port Authority agreed to build a complete set of ramps to and from West Side Highway and 30th Street, and to widen 30th Street between 10th and 12th Avenues.

In accordance with its previous plans, the authority will provide a grade separation from local streets for approaches at 33rd Street and will widen 30th Street between 9th and 10th Avenues.

HIGH QUALITY SCHOOLS

for 65 to 75% of prevailing area costs...

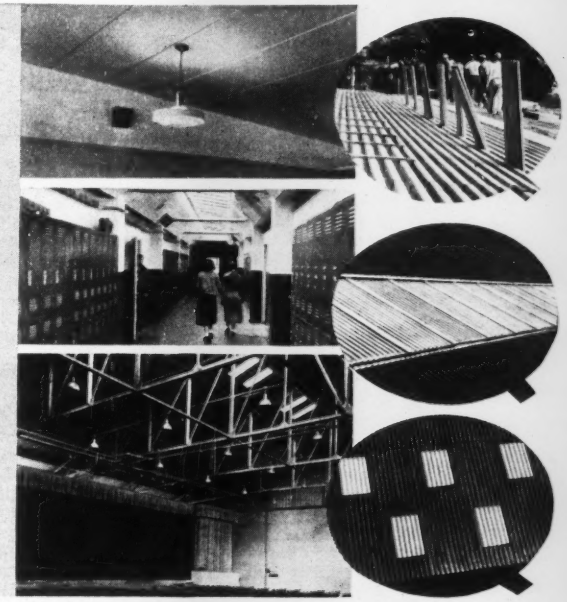
Gregson & Ellis schools do not skimp to achieve low cost. They have the de luxe features—finest lighting, ventilation, P. A. system and such equipment—that earmark today's best schools. The economy derives from the architects' ingenuity in organizing the job; in using materials functionally without disguise, and from their intelligent approach to design and budget problems. The other source of Gregson & Ellis' low cost is the economy inherent in Robertson materials. Contractor for this job was the Central Construction Co., of Atlanta, Georgia.

Complete figures, including costs, on these and similar schools are available for the asking

Also catalogs on Roof Deck, Skylights and Galbestos

showing how the materials can be used to reduce over-all weight and construction time.

Write to



ROBERTSON STEEL ROOF DECK forms a flat, attractive ceiling requiring only a paint finish. By sloping, the ceiling has good acoustical qualities. On the Roof Deck is 2" of insulation and a twenty-year bonded built-up roofing. The insert shows one detail of efficient job organization—workmen placing insulation and waterproofing on roof. The long-span deck is welded to steel members imbedded in the masonry walls.

ROBERTSON CORRUGATED WIRE GLASS SKYLIGHTS, used to daylight corridors, are a feature of all Gregson & Ellis schools. This scene is in the Jim Cherry School, Brookhaven, Ga., pictured above. This school with 16 classrooms, auditorium-dining hall, kitchen, offices, auxiliary rooms, public address system and other modern equipment was completed for $6.25 per sq. ft.

16 ROBERTSON SHEETLITES, set in a GALBESTOS roof, light this clean-cut auditorium. The structure is made entirely from noncombustible materials. This school at Manchester, Ga., has 27 classrooms, 3 offices, storage, toilet rooms and the 116' x 111' gymnasium-auditorium. It was built for $4.60 per sq. ft. The $217,000 total was $3,000 less than the budget.

H. H. ROBERTSON COMPANY

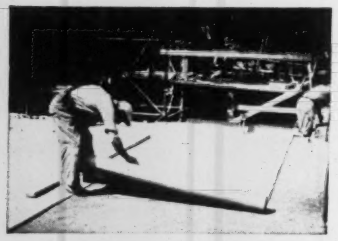
2420 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in ALL Principal Cities in the U. S. A. and Canada

World-Wide Building Service

SISALKRAFT

for "closing-in" and curing concrete at low cost



CLEAN, DUST-FREE FLOORS *at reduced cost*

IT'S STRONG: SISALKRAFT is so strong it furnishes positive protection from construction debris, and prevents marring and construction stains. Its strength makes it ideal for many "closing-in" operations, too.

IT'S LIGHT-WEIGHT: SISALKRAFT is so light and convenient to handle that it can be rolled into place easily and removed quickly. Can be re-rolled in most cases, and re-used many times over.

IT'S AUTOMATIC CURING: The SISALKRAFT Method of curing and protecting concrete is automatic . . . no watching, no sprinkling, no other covering required.

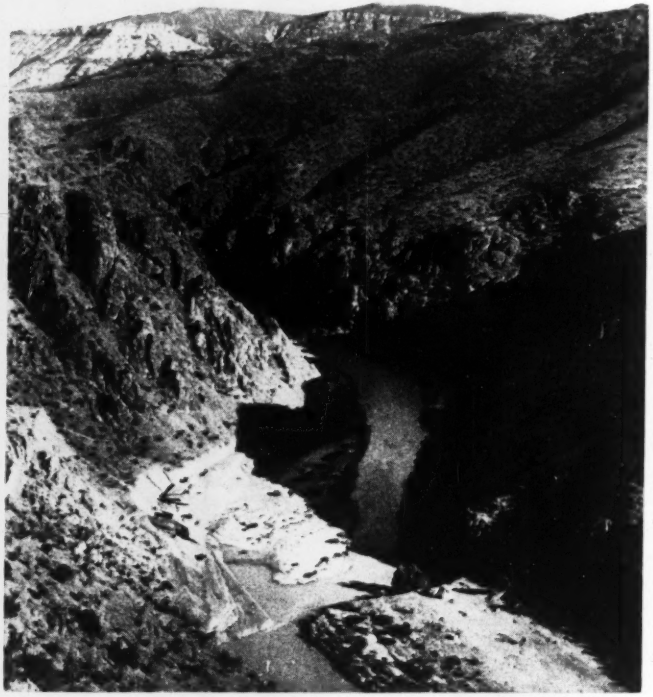
IT'S A "NATURAL" FOR YOU on single-story and multi-story jobs . . . also for curing and protecting driveways, sidewalks, foundations, roads and other concrete slab work or masonry.

Used on thousands of buildings, large and small, including world famous UNITED NATIONS Secretariat Building, MERCHANDISE MART and many others.

Write Dept. EN-6
for free samples and data

SISALKRAFT
WATERPROOF
SISAL-REINFORCED
PROTECTIVE PAPERS

THE SISALKRAFT CO.
205 West Wacker Drive, Chicago 6, Illinois
New York 17, N. Y. • San Francisco 5, Calif.



NEAR THE SAKARYA RIVER DAM SITE—This is the river and gorge above from the dam site, looking downstream. In the left foreground is the excavation for the diversion tunnel; in the upper left foreground is the fill for the bottom of the mouth of the intake tunnel. The dam site is beyond the bend where the river disappears. The diversion tunnel, now under construction, will begin on the river bed in the left foreground. The intake end of the power tunnel will be about 130 ft uphill from the diversion tunnel entrance on the left bank. When filled, the maximum level of the Sakarya reservoir will be almost 300 ft above the bottom of the diversion tunnel.

U.S. firm plans hydro power dams for Turkish, Colombian developments

Chas. T. Main, Inc., of Boston, Mass., at present is engaged on two extensive foreign projects—in Turkey and Colombia.

For the Etibank, Turkish government agency, the company's work consists of preliminary and engineering design, cost estimate, plans and specifications, purchasing of all equipment materials and supplies, management of construction and field supervision for a hydro-electric development to supply power to Ankara and Istanbul.

This includes a dam, power tunnel (used as diversion tunnel during construction of dam), surge tank, intake structure, on the Sakarya River powerhouse, switchyard, transmission lines and nine substations. Located about 100 mi west of the capital city of Ankara, the approximate cost of the project will be $50 million. The drainage area is about 16,500 sq mi. The dam will be of concrete gravity type with a maximum height of 360 ft; the base section, 300 ft; and the spillway capacity more than 300,000 cfs.

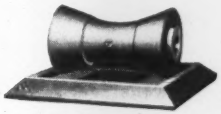
(Continued on page 68)

ADJUSTABLE PIPE HANGERS AND SUPPORTS

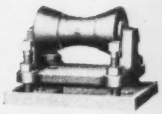
for every piping requirement

NO. 3 OF A SERIES SHOWING THE GRINNELL LINE

pipe rolls

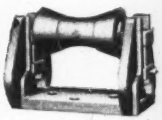


Pipe Roll and Plate
Fig. 277
2 to 30 in. pipe

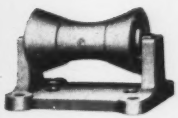


Adj. Pipe Roll with Base
Fig. 274
Without base: Fig. 275
2 to 30 in. pipe

Adj. Swivel Pipe Roll
Fig. 174
2½ to 12 in. pipe



Adj. Pipe Roll
Fig. 276
4 to 30 in. pipe



Pipe Roll Complete
Fig. 271
2 to 30 in. pipe

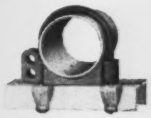
Single Pipe Roll
Fig. 171
1 to 30 in. pipe

pipe saddles

Pipe Stanchion Saddle
Fig. 259
4 to 36 in. pipe

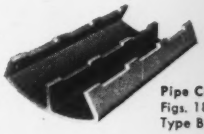
Adj. Pipe Saddle Support
Fig. 264
2½ to 36 in. pipe

Pipe Saddle Support
Fig. 258
4 to 36 in. pipe



Anchor Chair
Fig. 197
4 to 24 in. pipe

Pipe Covering Protection Saddle
Figs. 185, 186, 187, 188
Type A for 10 in. and smaller



Pipe Covering Protection Saddle
Figs. 185, 186, 187, 188
Type B for 12 in. and larger

Write for Hanger Catalog

GRINNELL

WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

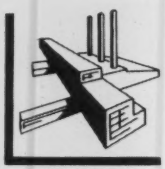
pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

UNMATCHED in SPECIALIZED VERSATILITY!

BUILDING CONSTRUCTION

MARINE CONSTRUCTION

HEAVY CONSTRUCTION



INDUSTRIAL CONSTRUCTION

Merritt-Chapman & Scott's record of accomplishment on major projects in every field of construction provides an invaluable background of special skills and techniques—which can prove a very real assest in solving your particular construction problems.

The 3,400-foot Elizabeth River Tunnel recently completed for the Elizabeth River Tunnel Commission at Norfolk, Virginia.

For example, in the field of heavy construction alone, we have to our credit three of the six vehicular trench-type tunnels built to date in this country. Current projects also include the Folsom Dam being built across the American River in association with the Savin Construction Corporation. On such work, as always, our unmatched background of diversified experience plays its part in overcoming those obstacles that often arise on projects despite the most careful advance planning.

Your Confidence is Justified Where This Flag Flies

MERRITT-CHAPMAN & SCOTT CORPORATION
FOUNDED IN 1860

General Offices
17 Battery Place, New York 4, N. Y.
CLEVELAND • BOSTON • NEW LONDON
DALLAS • NORFOLK • JACKSONVILLE

INTERNATIONAL

Statistics of other features of the project are:

Power tunnel length, 3,300 ft; lining 16 in concrete; diam. 28 ft.

Surge tank shaft, 24 ft diam riser, 92-ft diam tank; two penstocks.

Powerhouse: Two units initially, 4 units ultimately; turbines 65,000 hp each; head 260 ft; generators 40,000 kw each.

Transmission, switchyard step-up to 66 kv for about 50 miles of lines and to 154 kv for about 240 miles of lines. The principal substations will be at Istanbul, Adapazari, Ankara and Karabuk. There are five smaller substations in Ankara which are part of the new 35 kv system.

• **Colombia**—For the Central Hidroelectrica del Rio Anchicaya, Ltda., of Cali, Main has completed preliminary designs and estimates of costs and is reviewing working drawings prepared by the general contractors, Christiani and Nielsen, for a hydroelectric development to supply power to the city of Cali. The project, to cost about $15 million, includes a dam, power tunnel, diversion tunnel, intake structure, powerhouse, switchyard, transmission lines and substation at Cali.

The location is about 30 miles west of Cali on the Anchicava River. The mean annual rainfall in the drainage area is about 175 inches. The drainage area is only about 300 sq mi.

The dam is of the concrete gravity type of approximately 650 ft crest length; the height is about 180 ft maximum; the spillway length is about 500 ft and the capacity 200,000 cfs. The maximum recorded stream flow of the Anchicaya River is 57,000 cfs.

Power tunnel: Includes a surge tank of about 75 ft diam; length of the power tunnel approximately 4,500 ft.; dia about 20 ft. There are two penstocks.

Powerhouse: Two units initially, 6 units ultimately, 18,000 hp each; head 240 ft; generators 12,000 kw each.

Transmission: Switchyard step-up to 110 kv; length of lines about 30 miles.

The present installed capacity at Cali is 15,000 kw (steam).

Shallow water harbors planned for Liberia

Carl M. Spainhour, the only American army officer who worked with the British army on construction of the artificial harbors on the Normandie beaches for landing troops and supplies in France in World War II, is

going to Liberia to help that country select sites for shallow water harbors for coastwise shipping.

Mr. Spainhour will be on a Bureau of Reclamation Point 4 assignment. After the site or sites to be developed are determined, he will assemble the data for preliminary design and cost estimates, which will then be prepared at the Reclamation Bureau's Engineering Center at Denver, Colo.

U. S. mission recommends big development in Iraq

The economic survey mission to Iraq of the International Bank for Reconstruction and Development has called for major government construction in that nation.

Ivar Rooth, head of the mission and now managing director of the International Monetary Fund, reported that rapidly rising revenues from oil make it possible for the government to undertake a large-scale development program over the next few years.

Such a program, in the mission's opinion, should put major emphasis on the development of agriculture, both through the extension of irrigation and the improvement of drainage.

It also recommended the standardization of railway gages, and the development of an adequate network of surfaced roads, as well as educational and health measures to raise working efficiency. The mission outlined a 5-year development program, which would call for a total public expenditure of about $470 million.

In 1950 the bank made a loan to Iraq for a project to prevent the Tigris River from periodically flooding Baghdad and the area around it. Flood control is to be accomplished by a barrage and sluices which will divert excess water from the Tigris through a channel 33 mi long into a large land depression northwest of Baghdad known as the Wadi Tharthar. Last October a contract was awarded to a British firm for the construction of the channel, and work on the first phase of the project has begun.

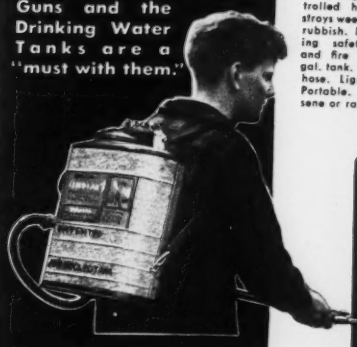
Housing in Europe report published

The National Association of Home Builders has made a special report in a 14-page booklet on a survey made last summer by American builders, who viewed the progress of postwar building programs in England, France, Germany, the Netherlands, Italy and Switzerland.

European land planning and community living programs in Holland

STOP FIRES FAST with INDIAN FIRE PUMPS

Protect property, guard lives with these famous back-pack extinguishers. Contractors and construction engineers find them very necessary in their outdoor work. The Flame Guns and the Drinking Water Tanks are a "must with them."



Have you Ordered INDIAN FIRE PUMPS for Civil Defense? Be prepared!

FLAME GUN SPRAYER

HUNDREDS OF USES

2000 degrees controlled heat. Destroys weeds, brush, rubbish. For burning safety strips and fire lanes. 4 gal. tank, 7 ft. oil proof hose. Light. Compact. Portable. Burns kerosene or range oil.

Smith INDIAN Drinking Water & Supply Tank

For carrying drinking water to fire fighting crews, and refilling Indian Fire Pumps. 5-gal. cap. Push button faucet. Carries by handle or slung on back.

Send for Full Details on INDIAN FIRE PUMPS and our Complete Line of Sprayers

D. B. SMITH & CO. 432 MAIN ST. • UTICA 2, N.Y.

"Originators of Sprayers Since 1888"

Servicised PREMOLDED JOINT FILLERS

A COMPLETE LINE FROM ONE SOURCE TO MEET ANY REQUIREMENTS

KORK-PAK* Exclusive with Servicised. Lowest cost non-extruding joint filler. 80% recovery after compression. Low moisture absorption. Readily handled without breakage.

SELF-EXPANDING CORK For positive joint filling. Specially treated to expand 50% beyond original thickness after compression to keep joint filled under contraction which opens space to more than original size.

ASPHALT Forms an easily compressible cushion. Highly waterproof, low in cost. Made in 5 thicknesses in any length or width. Formed between two sheets of asphalt saturated felt paper which increases strength and rigidity, improves handling.

SPONGE RUBBER CEMENTONE Blends with color of concrete. For use in architectural concrete structures such as bridges, viaducts, etc., where black color of ordinary fillers would be objectionable. Fully resilient —non-extruding.

CORK High recovery factor (95%) after compression, non-extruding qualities and light color make Cork Joint Filler ideal for use in flood walls, outlet works and spillways, sewage treatment plants, filtration plants and bridge construction.

WRITE FOR THE COMPLETE SERVICISED CATALOG. Describes the full line of Servicised Asphalt, Cork, and Rubber Composition products.

*KORK-PAK is one of the many Patented products developed for the Construction Industry by Servicised Products Corp.

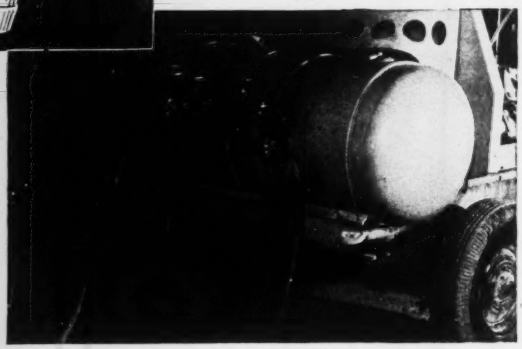
SERVICISED QUALITY PRODUCTS

SERVICISED PRODUCTS CORP.

6051 W. 65TH STREET • CHICAGO 38, ILLINOIS

THIS *Versatile Coupling*

while used primarily for air-operated tools in field and factory, is equally efficient for water, oil and spray service. Illustration shows hose end and female I.P.T. end connected.



"AIR KING" *Quick-Acting Universal* HOSE COUPLING

The "AIR KING" will reduce operating costs on every job requiring quick connection. Heads are locked by simply pressing together and giving one a quarter-turn. These locking heads are identical for all sizes of hose or threaded ends, permitting the coupling of any two sizes of hose, or hose and pipe, within the "AIR KING" size range. Equipped with patented safety locking device. Available in bronze or rustproofed malleable iron, in sizes up to 1".

Two Hose Ends Connected

Male I.P.T. End

Stocked by Manufacturers and Distributors of Industrial Rubber Products

DIXON *Valve & Coupling Co.*

GENERAL OFFICES & FACTORY—PHILADELPHIA 22, PA. BRANCHES—CHICAGO
BIRMINGHAM • LOS ANGELES • HOUSTON • DIXON VALVE & COUPLING CO., LTD., TORONTO
ASSOCIATE COMPANIES: BUCK IRON COMPANY, INC., QUARRYVILLE, PA. • PRECISION DRAWN STEEL COMPANY, CAMDEN, N.J.

and Switzerland were found to be excellent. The worst housing observed was in France and Italy. Conditions in England are reported somewhat better, but government controls are slowing up the program there. The group noted only one-fifth of the British housing built for sale, with the remainder government built for occupancy by approved tenants.

The Germans are systematically and industrially rebuilding their country. In Italy, new housing is virtually inaccessible to low income families.

Copies of the report are available free from the Public Relations Dept. National Association of Home Builders, 1028 Connecticut Ave., N. W., Washington 6, D. C.

Ontario plans further expansion at Niagara

Because power development of the St. Lawrence River has been delayed by failure of Congress to approve the 1941 agreement covering that project, the Ontario Hydro-Electric Power Commission will start its second big tunnel to divert water from above Niagara Falls to its new power station this year instead of 1956 as originally planned. Work on the first tunnel started last year (ENR Sept. 6, p. 39).

Announcement of the decision to go ahead with further expansion at Niagara Falls was made by Robert Saunders, chairman of the Ontario Hydro-Electric Power Commission.

The present work provides for the installation of 7 units of 100,000 hp each in a new power plant adjoining the old Sir Adam Beck station in the lower gorge at a cost of $182,000,000.

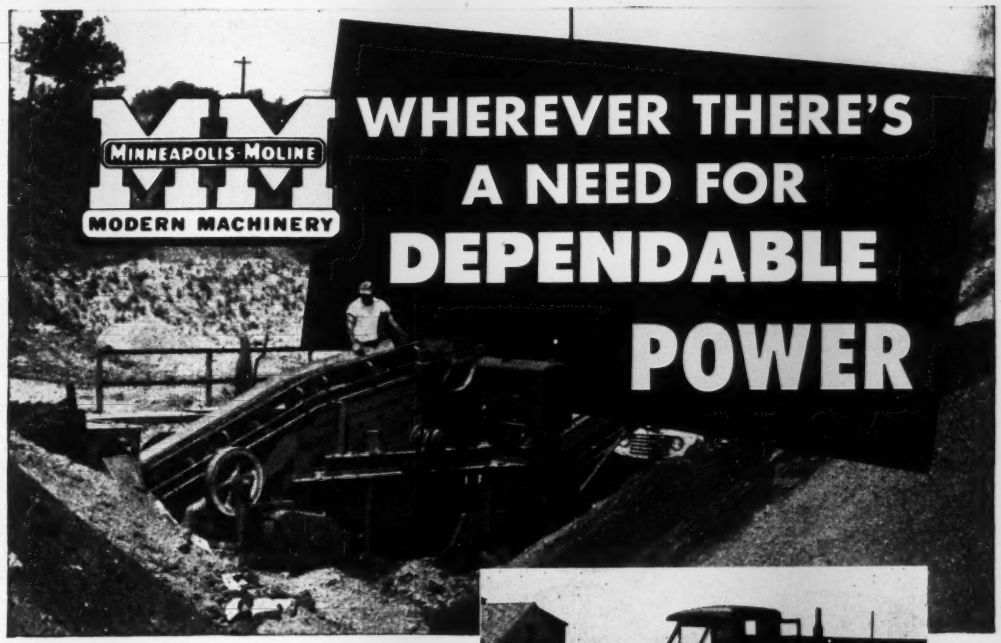
The second unit will provide another 500,000 hp on the Canadian side of Niagara Falls, and will cost about $129,000,000.

The second tunnel will parallel the one now under construction, will also be 45 ft in diam, and 5¼ mi long.

By building the second tunnel now, instead of in 1956, Mr. Saunders pointed out, Ontario will be prepared for a power shortage which is predicted for 1956. It had been hoped to have the St. Lawrence River power project in operation by that time.

• **Ponte Vecchio in danger**—The German army in its retreat from Italy in the summer of 1945 destroyed five magnificent old bridges across the Arno River in Florence. The famous Ponte Vecchio was spared, but it was weakened so that extensive repairs are needed to save the 600-year-old stone arch bridge from collapse.

(*International continued on page 72*)



YOU CAN COUNT ON POWER UNITS for *LONGER LIFE...LOWER COST OPERATION*

Heavy-duty design is relative in terms of the job an engine has to perform.

MM engines develop their torque and power at moderate speeds to handle continuous or sudden loads without strain. These are the qualifications necessary for heavy-duty industrial use that are not available in light engines that obtain their torque at high speed. Compare MM heavy-duty design part for part, and pound for pound with others. Determine which engine is built for longer, more dependable operation. Consider what MM large bearing areas, large crank shaft diameters, and thick cylinder wall construction means in terms of that extra margin of durability.

See how MM cylinder blocks are made removable and of special long wearing iron alloy . . . oil pump, water pump, and governor are gear driven for extra dependability. MM also maintains strict quality control for finest precision fitting parts.

Get the MM facts on dependable trouble-free engine operation!

SEE YOUR MM DISTRIBUTOR—DEALER OR WRITE...

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINN.

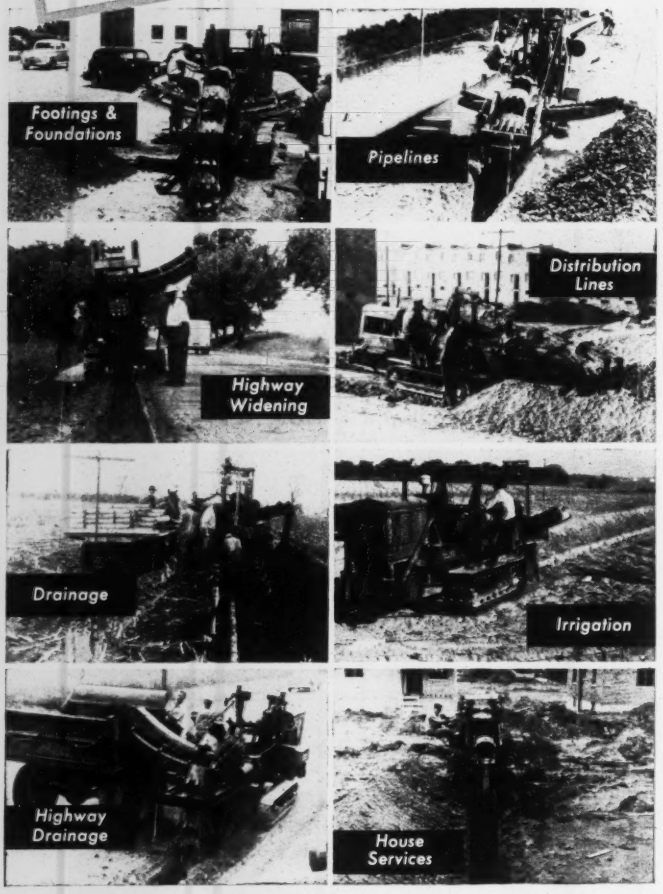
MM POWER UNITS ARE AVAILABLE TO FIT ALL YOUR REQUIREMENTS

No specialist—but a

Performance-Proved

EXPERT

on all types of trenching jobs



CLEVELAND *Pioneer of the Modern Trencher*

GET THE FULL STORY FROM YOUR LOCAL DISTRIBUTOR

THE CLEVELAND TRENCHER CO.

20100 ST. CLAIR AVENUE • CLEVELAND 17, OHIO

Southeast Asia plan advances in first year

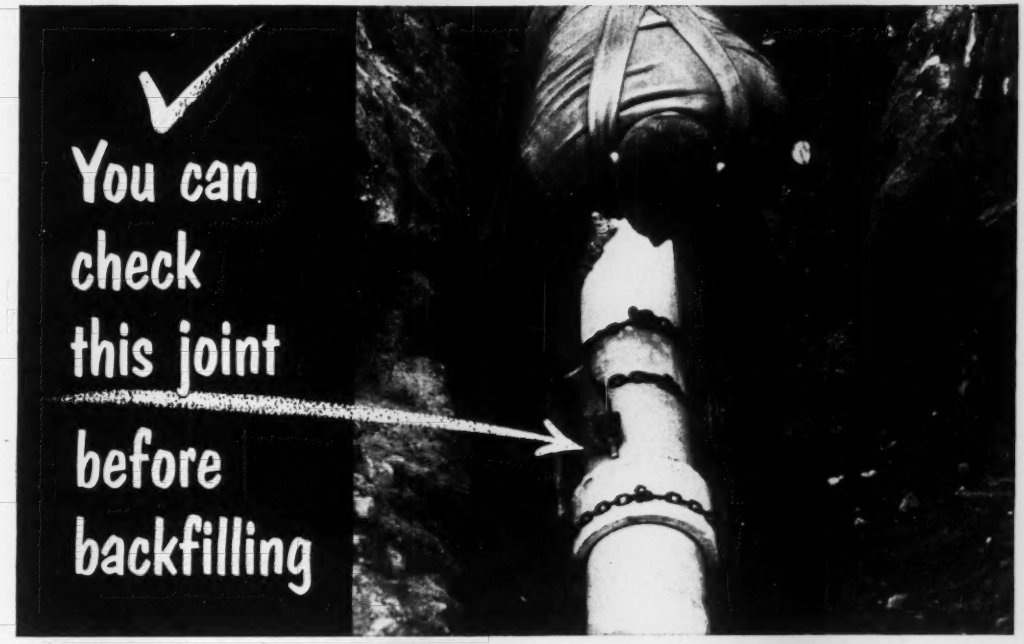
Among the practical results shown in the first 12 months of the Colombo Plan (ENR Apr. 12, p. 58) for the development of Southeast Asia are the following:

• **India**—Nearly a billion cu ft of earth have been excavated for the Bhakra-Nangal Dam, which will be on the scale of America's Hoover Dam. The Kans grass project for the reclamation of weed-infested land is going ahead and the Lower Bhawani scheme, which will irrigate 207,000 acres is half completed. The largest fertilizer factory in Asia, the Sindri Fertilizer Plant, is already in production. It will yield 1,000 tons of ammonium sulphate daily, one-seventh of India's needs.

• **Pakistan**—The main work on the Thal irrigation scheme, to irrigate 1½ million acres, has been completed. This arid, but potentially fertile region will provide homes and farms for 250,000 Pakistani farmers, plus a research farm equipped with its own power plant planned as one of the largest and most modern in Asia. This farm is being established with the cooperation of Australia, Canada, and New Zealand, which will provide the necessary equipment, technical experts and training facilities. Good progress has also been made with a number of hydro-electric power projects and several new textile and other plants.

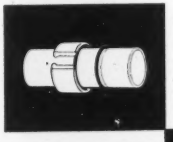
• **Ceylon**—Work on damming the Gal Oya River in the Eastern Province has made good progress. The main dam is almost finished and construction of the irrigation channels has commenced. It is hoped to provide 22,000 acres with irrigation facilities by the end of 1953, and other projects will irrigate a further 22,000 acres this year. The first stage of the hydro-power project, which will generate 25,000 kw. has been completed and work on two further stages, each providing an additional 25,000 kw. has commenced. In the industrial field, existing plants are being modernized and new factories are being built.

• **Malaya**—The task of re-settling some 400,000 squatters in new villages provided with schools and proper sanitation, is nearing completion. Work has begun on a large power station at Singapore. Preliminary investigations are being made for the construction of the Connaught Bridge hydro-power project which is designed for an ultimate capacity of 800,000 kw.



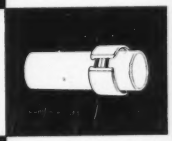
. . . it's the *tight* RING-TITE JOINT used with TRANSITE SEWER PIPE

HERE'S HOW THE RING-TITE JOINT WORKS:



Start of assembly. Two rubber rings and a Transite sleeve (cut away to show position of the rings) are placed on one of the two pipe ends to be joined.

Final position. Sleeve centered over both pipe ends, with the rubber rings tightly compressed between sleeve and pipe.



Checking joint for proper assembly. This is done with a simple gauge immediately after the joint is made . . . *before backfilling.*

*Transite is a registered Johns-Manville trade mark

NOT ONLY IS IT POSSIBLE to assemble the new Ring-Tite Coupling in a fraction of the time required for making ordinary sewer pipe joints—but, with the use of a simple feeler gauge, you can check this joint for proper assembly as soon as it is made, *and backfill immediately!*

This "packaged" joint—furnished with Transite* Pipe and ready for assembly—has still other important practical advantages. Not only are there fewer joints to make due to long thirteen-foot lengths, but time is saved also by eliminating the use of poured compounds. Just a simple assembly operation with a mechanical coupling puller, and the Ring-Tite Joint is ready for service.

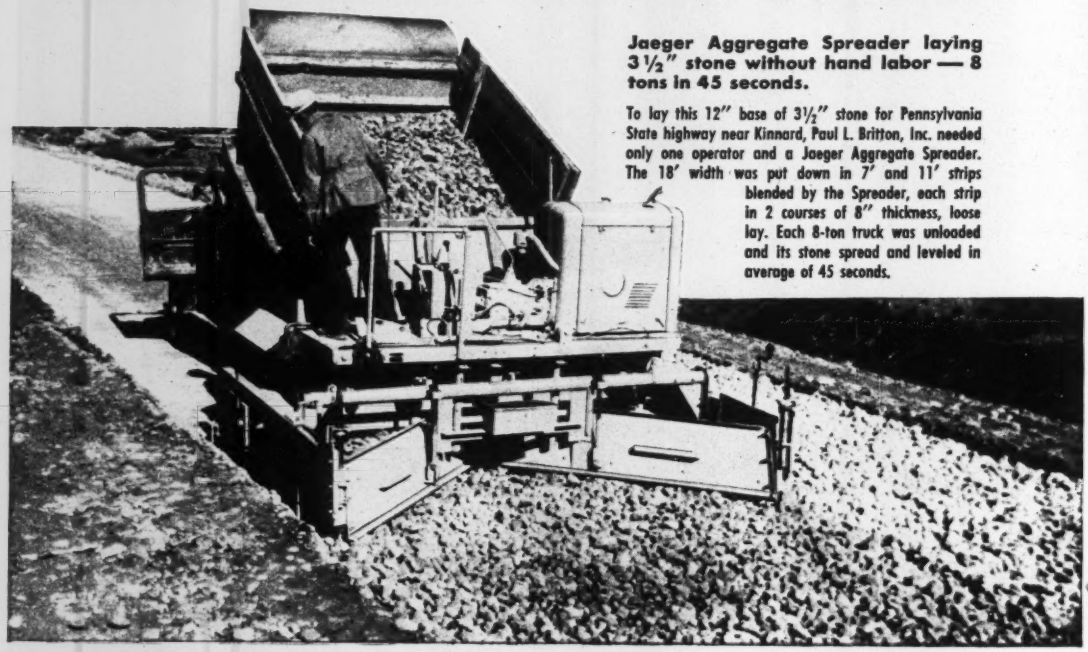
Its tightness means less infiltration in the sewerage system and this effects savings in treatment costs. Transite's high-flow capacity (Manning's n = .010) often results in substantial installation savings by permitting flatter grades and shallower trenches—an important economy where pipe is laid at or below the ground water table or in rock excavation.

For further data about this corrosion-resistant asbestos-cement pipe and how it can save money for you, write for Folder TR-103A. Address your inquiry to Johns-Manville, Box 60, New York 16, N.Y.

JOHNS-MANVILLE PRODUCTS

Johns-Manville TRANSITE SEWER PIPE

7 WAYS TO MAKE MONEY
with high production, labor-saving JAEGER tools



Jaeger Aggregate Spreader laying 3½" stone without hand labor — 8 tons in 45 seconds.

To lay this 12" base of 3½" stone for Pennsylvania State highway near Kinnard, Paul L. Britton, Inc. needed only one operator and a Jaeger Aggregate Spreader. The 18' width was put down in 7' and 11' strips blended by the Spreader, each strip in 2 courses of 8" thickness, loose lay. Each 8-ton truck was unloaded and its stone spread and leveled in average of 45 seconds.

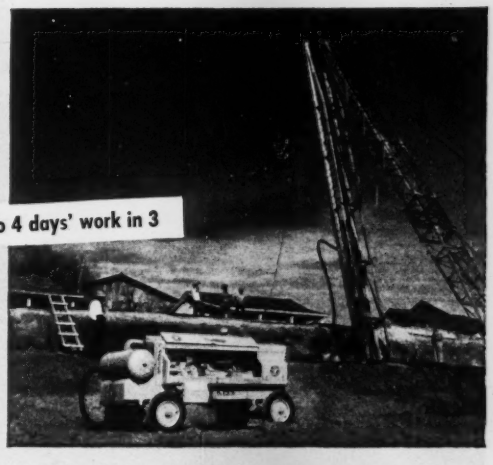
Jaeger Paver-Type Aggregate Spreader, costing only half the price of bituminous pavers, offers unequalled economies in laying all types of base and surface aggregates, plant-mixed stabilized soil or free-flowing bituminous mixtures. Can lay up to 10" thickness of coarse stone or 12" of fine or graded materials in widths to 11', or lay lesser thicknesses up to 12½', in one pass. Straightedge runners, which carry the strike-off, insure the accuracy required for highway, street and airport base, and the base and top of secondary roads, parking areas and drives. Crawler traction is entirely on the subgrade, avoiding displacement of the loose material. Machine can lay flush to curbs or headers and blend joints. Two models, to work with any size trucks you use.

Labor-saving concrete paving with "3-screed team"

Jaeger Screw-and-Screed Spreader: The only spreader equipped with a re-mixing screw and, for high production work, a 12" oscillating screed which accurately meters material for the finishing machine. No costly carry-back, no high or low spots; always uniform compression under the finisher screeds. Can also spread and finish concrete base for streets.

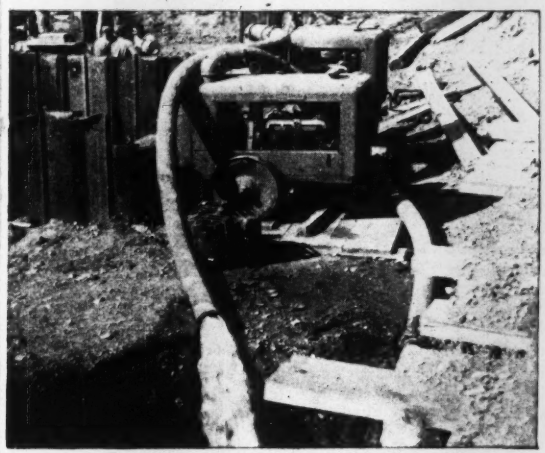
Jaeger Diagonal Screed Finisher: Completes today's "3-screed team." Equipped with transverse front screed followed by diagonally adjustable rear screed which works material up-hill on pitched slab and super-elevated curves and compacts it flush against the higher form. Saves hand labor, finishes faster without tearing, produces a smoother surface.

"Air Plus" Compressors do 4 days' work in 3



Jaeger "2-Breaker" Model 125 makes 105 ft. compressors obsolete. This trench job with 2 heavy duty breakers moved 40% faster because Jaeger's 125 cfm of air at 100 lbs. held steady full pressure behind the tools, instead of a "loafing" pressure of 70 lbs. at which tools are inefficient.

"Air Plus" Model 600 efficiently powers a heavy 9B-3 hammer. Jaeger was first to build a 600 ft. compressor needed to operate a big pile hammer, or 2 heavy duty wagon drills, effectively. Other Jaeger "new standard" sizes — 75, 125, 185, 250 and 365 cfm — offer comparable advantages.



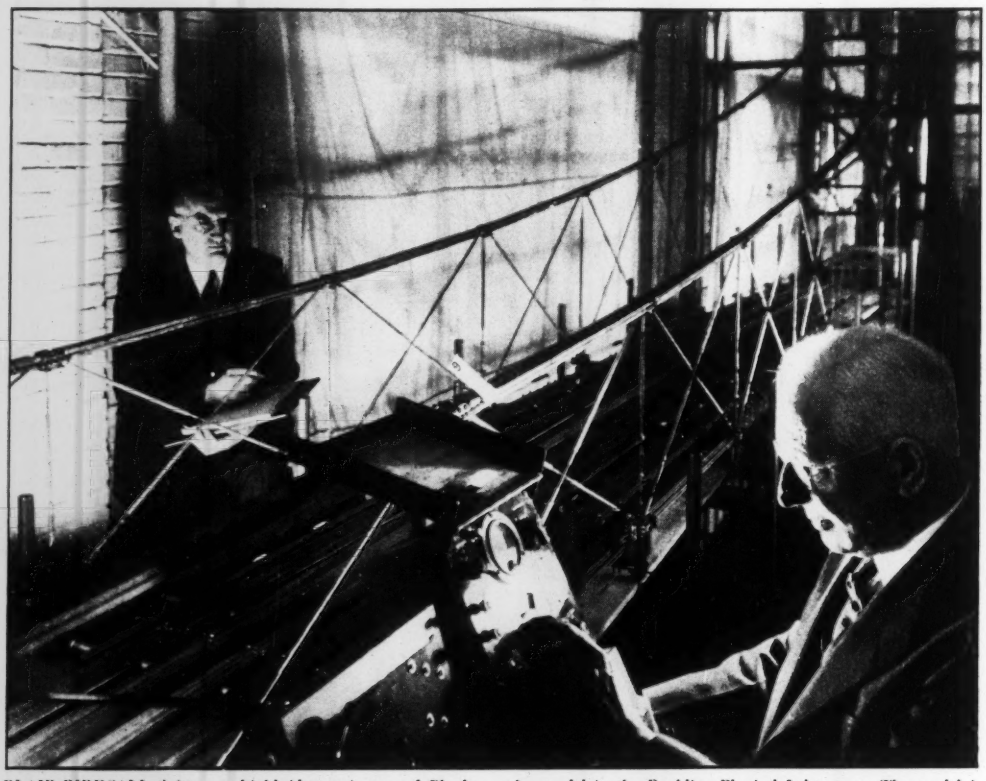
A Jaeger Never Races to Prime: During 3 years' constant service on cofferdam work, these "Sure Prime" pumps often operated non-stop for months, at times repriming every minute at 20' suction lift, *and never ran faster than 1200 rpm.* Compare this performance, and resulting long life of Jaeger pumps and engines, with other pumps that must race at 2000 rpm to meet the same conditions.

Jaeger Mixers for Big Yardage: 5 to 7 seconds charging with Jaeger's automatic Skip Shaker loader, and equally fast discharge with the extra big bucket and flight blades of the Jaeger "dual mix" drum, shortens each mixing cycle, gains time for more batches. Machined steel drum track, Timken bearing rollers and heavy duty transmission insure longest life, free from breakdowns on the job.

There are Jaeger "service stations" in 153 cities — always near your jobs. See your nearest Jaeger distributor for sales, rentals, service — or write us for complete catalogs.

THE JAEGER MACHINE COMPANY

200 Dublin Avenue, Columbus 16, Ohio • Cable BIGANLITLE



BLAIR BIRDSALL (left) new chief bridge engineer, and Charles C. Sunderland (right) now retiring, have operated as an effective team. Here they are shown recording the stress on cable members of a model in the Roebling Physical Laboratory. The model is of a cable truss bridge in which pre-stressed cables are enabled to carry compression stresses.

Bridge engineer retires; has served over 50 years

Charles C. Sunderland, chief bridge engineer for the John A. Roebling's Sons Company, Trenton, N. J., has retired after more than a half-century of service. He will be succeeded by Blair Birdsall.

In assuming his duties as chief bridge engineer, Birdsall is the fourth to hold this position in the history of the Roebling Co. John A. Roebling, founder of the company, was the first chief engineer, followed by his famous son, Washington A. Roebling who in turn was succeeded by Charles C. Sunderland.

• **Sunderland**—Considered one of the world's foremost bridge engineers, Sunderland retires after an active career of more than 50 years, dating back to 1901 when he began as a draftsman in the Roebling Bridge and Tramway Department, then located in New York City.

Born in Halifax, Yorkshire, England, Sunderland rose from a draftsman in 1901 to an assistant engineer in 1905. In 1929 a separate bridge division was established and he was named as chief bridge engineer.

During Sunderland's service with Roebling, the company completed such major contracts as the main cables of the George Washington Bridge, the Golden Gate Bridge and the Tacoma Narrows Bridge, also achieving many engineering feats in any number of smaller contracts.

• **Birdsall new chief bridge engineer**—Birdsall assumes the position after almost 18 years of service with the Roebling Bridge Division. A graduate of Princeton University with a degree in engineering in 1929, he was employed by the architectural firm of Voorhees, Gamelin and Walker from 1930 to 1931 and spent nine months with the Port of New York Authority.

Joining the engineering staff of the Roebling Bridge Division in 1934, he assisted with engineering design work in connection with Roebling bridge contracts, including the famous Golden Gate Bridge, on which job he was a field engineer.

(*Continued on page 78*)

Driving's always smooth

on the Rickenbacker Causeway

FLEXCELL*
JOINT FILLER
keeps joints smooth, tight, maintenance-free!

Rickenbacker Causeway Between Crandon Park and Miami, Fla.

Photograph by Richard B. Hoit

JOINTS STAY CLOSED, neat, smooth when you use Flexcell Bituminous Fibre Expansion Joint Filler wherever concrete meets concrete. It's tough, durable, virtually eliminates maintenance!

MILLIONS OF TINY AIR CELLS in the cane fibre base of Flexcell permit it to absorb pressure from expanding concrete without extruding—spring back to keep the joint closed when concrete contracts. This prevents bulges and bumps, does away with gaping crevices.

LOW IN FIRST COST, Flexcell Joint Filler is easy to handle, easy to work with. Gives neat, finished joints without trimming. Protected by the patented Ferox® Process from dry rot and termite attack. Impregnated with asphalt to resist moisture. Withstands severest service and climatic conditions—saves on maintenance year after year!

THESE ARE THE REASONS why Flexcell has long been specified by leading engineers, contractors and architects, as well as the U. S. Army, Navy and many other Federal, State and Municipal agencies.

SO BEFORE YOU BEGIN another job, investigate the advantages and economies of using Flexcell Joint Filler—for pavements, runways, sidewalks, curbs, gutters, driveways, concrete floors. You'll be glad you did! Mail coupon today for full data.

Another CELOTEX *Product*
REG. U. S. PAT. OFF.

FLEXCELL

REG. U. S. PAT. OFF.

BITUMINOUS FIBRE EXPANSION JOINT FILLER

The Celotex Corporation, 120 S. LaSalle Street, Chicago 3, Illinois

*Flexcell is a Trademark identifying Bituminous Fibre Expansion Joint Filler marketed by The Celotex Corporation.

MAIL COUPON TODAY

The Celotex Corporation, Dept. ENR-62
120 S. LaSalle St., Chicago 3, Ill.

Without obligation, please send me complete data and prices on Flexcell Bituminous Fibre Expansion Joint Filler.

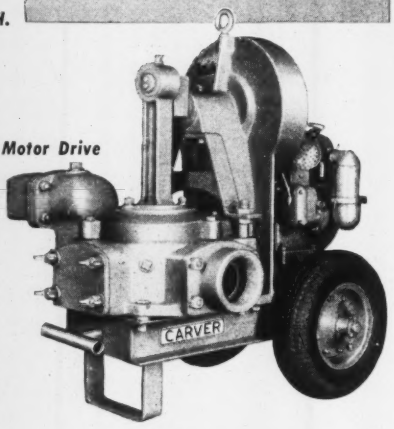
Name_____

Address_____

City_____ Zone____ State_____

For the Pump to handle the Roughest, Toughest Jobs with ease depend on CARVER DIAPHRAGM PUMPS

★ *4" Suction and Discharge*
★ *Capacities up to 6,000 G.P.H.*
★ *Timken Roller Bearings*
★ *Non-Clogging Valves*
★ *Long-Life Diaphragm*
★ *Enclosed Transmission*
★ *Gasoline Engine or Electric Motor Drive*

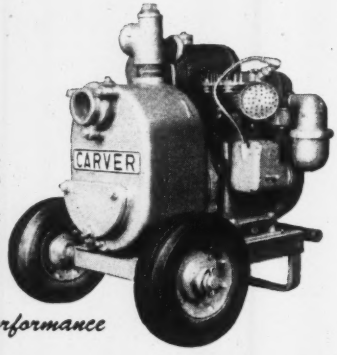


Designed from suction to discharge for rugged dependable pumping they're loaded with reserve power and stamina to handle sludge, mud, seepage, grit, sewage and septic tanks with the greatest of ease.

Nothing fragile about these pumps, no underpowering, no compromise on quality. Throughout their many years Carver Pumps have earned an enviable reputation on the toughest construction jobs.

Specify CARVER *for the Complete* QUALITY LINE

CARVER manufactures a complete line of the highest quality self-priming pumps in all sizes from 4,000 to 240,000 G.P.H. gasoline engine, diesel, motor or belt drive. See your CARVER Distributor or write for Bulletin No. 110.



CARVER CONTRACTOR PUMPS
. . . the best buy for better performance

CARVER PUMP CO. 1400 Hershey Ave., Muscatine, Iowa

CARVER PUMPS

ROY S. CAMPBELL to atomic-energy plant.

Engineer goes to Paducah as project assistant

F. H. McGraw & Company officials have announced the appointment of Roy S. Campbell as deputy project manager of the firm's $500-million atomic energy plant now under construction near Paducah, Ky.

A former president of the New York Shipbuilding Company, Campbell has recently been a member of the Maritime Administration in Washington, D.C. and previously was associated with the Munitions Board for 10 years. He was general superintendent of the Bethlehem Shipbuilding Company's Quincy yards.

As project superintendent for Babcock G. Wilcox Company at Boulder Dam, Campbell supervised the building of downfalls and penstocks—a heavy construction job unmatched for size at that time.

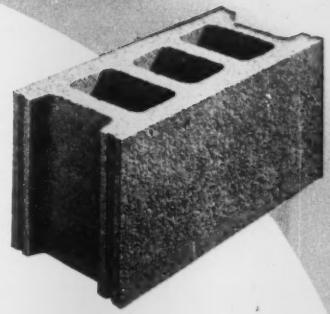
Clifford Strike, president of the McGraw Company, chose Campbell as a member of the Overseas Consultants, Inc. a team whose economic study of Japan formed the basis for Allied occupation plans. In recognition of this work, the Army named Campbell to a five-man board to plan the dissolution of Japan's controlling industrial organizations. The OCI later called on Campbell to make a technical study of Iran prior to the adoption of that nation's seven-year plan.

A native of Detroit, Campbell received his engineering degree from the University of Michigan. He now makes his home in Warm Springs, Va.

(*Men and Jobs continued on page 81*)

Let's Face the Facts about CONCRETE MASONRY

This Modern Building Material Adds Beauty and Permanence to ANY Type of Structure!



You can build concrete masonry structures in beautiful architectural designs with the assurance they will last a lifetime. Both exterior walls and interior partitions are made in many pleasing patterns by varying the styles and sizes of block. The initial cost is low and the upkeep is nil.

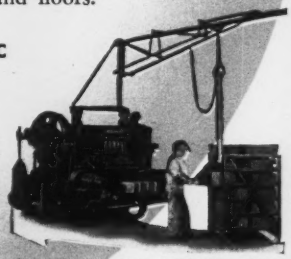
Concrete masonry structures are ARMORED against age, climate, fire, termites, rodents, tornadoes, hurricanes and floods. Interior walls are built with lightweight block composed of cellular aggregate which provides proper acoustics and reduces noise transmission through walls. Lightweight block are also used as a back-up material for exterior walls providing insulation against heat and cold. Wall dryness provides good health and sanitary conditions. Restful quiet is assured by sound conditioning between rooms and floors.

CHURCHES find concrete masonry construction both practical and economical.

All Styles and Sizes Made on the VIBRAPAC

The Besser Company is a leader in promoting the Concrete Products Industry and making it a world-wide enterprise. All styles and sizes of block are made on an automatic Vibrapac machine, using One Set of Plain Pallets. Many large contractors and builders find it profitable to install Vibrapac machines and produce their own concrete block. Why not investigate? Write for Bulletin No. 86, illustrating concrete masonry units, also names of Vibrapac-equipped plants in your area.

BESSER MANUFACTURING CO.
Alpena, Michigan, U. S. A.

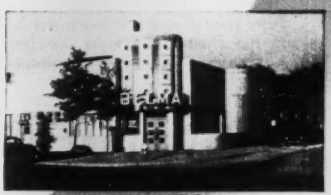


Besser Vibrapac with Power Off-bearing Hoist. Produces three 7⅝" x 7⅝" x 15⅝" modular units at a time on one Plain Pallet. Smaller units made in larger multiples on the same pallets. Fully automatic. Operator merely guides the hoist.

HOSPITALS are constructed with block walls and floors to promote health and safety.

PUBLIC BUILDINGS throughout the world use millions of concrete masonry units.

HOMES, both large and small, are built of block for firesafety, beauty and permanence.



COMMERCIAL ESTABLISHMENTS utilize various types of block to modernize their building.

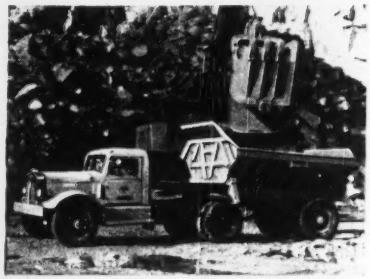
BESSER

BATCH MIXERS | **SKIP LOADERS** | **BLOCK & BRICK CUBERS** | **SUPER VIBRAPAC** | **SINTERING PLANTS** | **ACROW CENTERS** | **ROOF TILE MACHINE**

A 7077-1PB-C

Heavy-duty Autocars are economical

Warner Co., Philadelphia, Pa., general contractors and makers of cement and concrete mix, operate this sturdy C-90-D Autocar, shown here unloading. An overhead crane tips the pan-type semi-trailer body.



Loading up. The Autocar takes a pass from the shovel. Tough conditions like this are the supreme test of Autocar's heavy-duty design.

If economy means hauling the load you want at any safe speed, without abusing your hauling equipment, then Autocars have economy aplenty. You can't beat these great trucks for dependable hauling *in volume* and under tough conditions.

Fully loaded and making a quick trip to the crusher. Autocars are geared and overgeared for those extra trips.

AUTOCAR TRUCKS

The Autocar Company, Ardmore, Pa. • Established 1897

Factory Branches and Distributors from Coast to Coast

- **1 . . . Haul big loads**
- **2 . . . Control the load**
- **3 . . . Are strong all over**
- **4 . . . Are dependable**
- **5 . . . ARE ECONOMICAL**
- **6 . . . Make man-hours productive**
- **7 . . . Keep pace with traffic**
- **8 . . . Are custom built**
- **9 . . . Have extra power when needed**
- **10 . . . Are long-lived**

H. A. SAWYER, civil engineer, new president of Lone Star Cement Corp.

Engineer selected to lead large cement corporation

Lone Star Cement Corporation's board of directors last week named H. A. Sawyer president of the company to succeed R. A. Hummel, new chairman of the company board.

Sawyer, formerly in charge of the corporation's Louisiana division, has been associated with Lone Star since 1925.

A civil engineer by training, Lone Star's new president has had wide administrative and selling experience. Following his graduation from Texas A. & M., he held engineering positions in Texas and with the Illinois Highway Department, serving as an engineer officer in World War I. Sawyer spent three years as commissioner general of Liberia. Ako joined Lone Star in 1925 and became vice-president and Louisiana division manager in 1931.

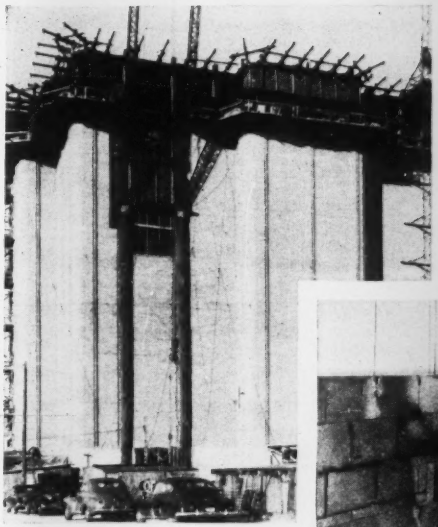
In 1937, Sawyer was elected president of the Louisiana section, ASCE, and has also served as director of that organization.

Robert B. Moorman to head Syracuse CE department

Robert B. Moorman, Professor of Civil Engineering at the University of Missouri since 1935 will become chairman of Syracuse University's Department of Civil Engineering in September.

A graduate of the University of Illinois, Moorman secured his Professional Degree of Civil Engineer from

(Continued on page 84)



NEW 12 story stockhouse of the Miller Brewing Company, Milwaukee, Wisconsin, is the world's largest, with a capacity of 260,000 barrels. On walls and roof FOAMGLAS helps maintain the required interior temperature of 28° F. Large photo shows exterior masonry still being laid up against FOAMGLAS. Small photo shows the big light weight blocks of FOAMGLAS built up as a free standing, self-supporting wall of insulation. Architect: Oscar Jannsen, St. Louis, Mo. Insulation Contractor: Sprinkmann Sons Construction Co., Ltd., Milwaukee, Wisconsin.

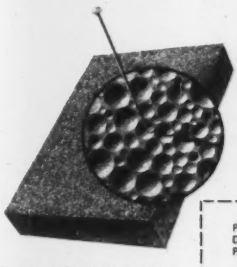
Time meant money
–so they saved a year

• The Miller Brewing Company needed an enclosed, well insulated stockhouse, and they needed it right now. So, by erecting free standing walls of moisture resistant FOAMGLAS on the steel frame, the building was ready for operation nine to twelve months ahead of schedule, even before the masonry was completed.

In walls, on roofs and under floors, FOAMGLAS has proved the ideal aid for maintaining both normal and low temperatures. It is made of glass, which repels many destructive elements, so FOAMGLAS gives "good as new" service for years on end without costly maintenance.

Be sure that the lastest data on FOAMGLAS is in your file. We shall be glad to send you a sample of the material and copies of our latest booklets. Just drop the coupon in the mail.

PITTSBURGH CORNING CORPORATION • PITTSBURGH 22, PA.



The best glass insulation is cellular glass. The only cellular glass insulation is FOAMGLAS. This unique material is composed of still air, sealed in minute glass cells. It is light weight, incombustible, verminproof. It has unusually high resistance to moisture, chemicals and many other elements that cause insulation to deteriorate.

PITTSBURGH PC CORNING

FOAMGLAS®

the cellular glass insulation

Pittsburgh Corning Corporation
Dept. AR-62, 307 Fourth Avenue
Pittsburgh 22, Pa.

Please send me, without obligation, a sample of FOAMGLAS and your FREE booklets on the use of FOAMGLAS for: Normal Temperature Commercial, Industrial and Public Buildings ☐ Refrigerated Structures ☐

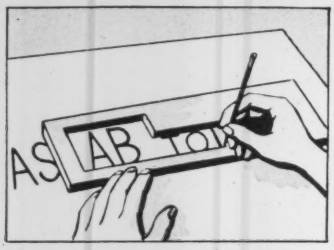
Name.....

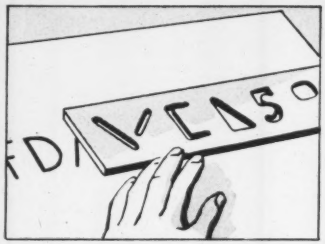
Address.....

City.....State.....

From freehand to stencil

... this better way of lettering

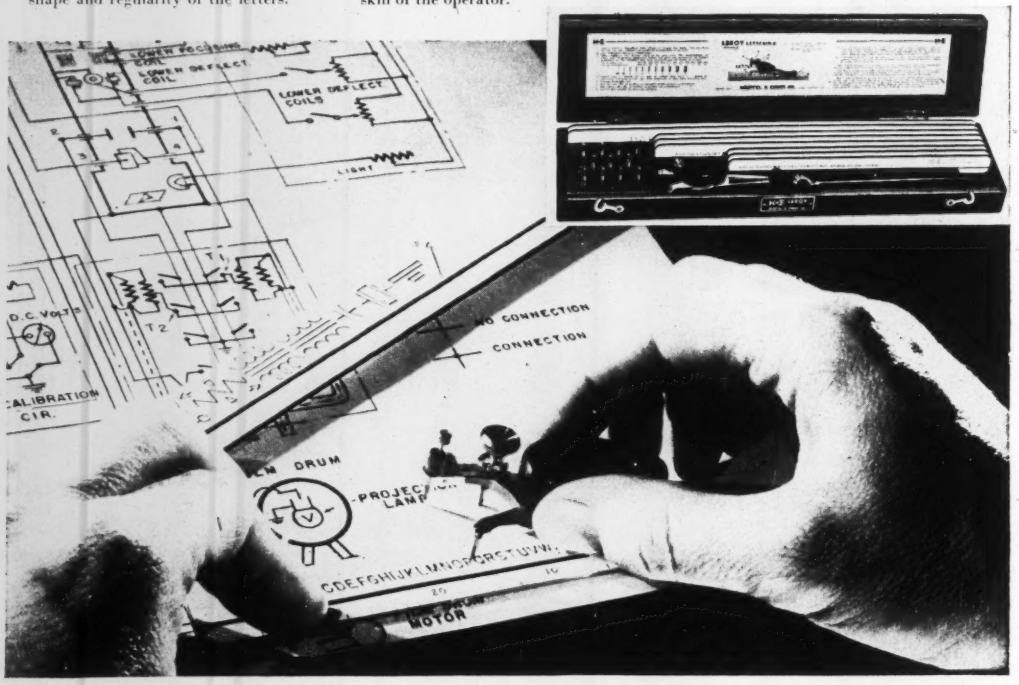




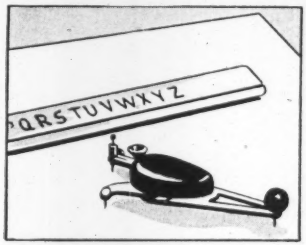
If the results of freehand lettering were always something to be proud of, there would be little or no need of special lettering aids. But as draftsmen know, freehand lettering is often irregular in appearance, and seldom can two men in a department letter exactly alike. Even as simple a device as a height guide helps considerably. Yet it fails in the important function of controlling the shape and regularity of the letters.

An obvious way of controlling shape as well as size is to use a stencil guide. To avoid the broken lines characteristic of stencils, guides were first devised consisting of cut-out portions of letters which could be combined to compose complete letters. However, they covered the work in progress, obscuring it from view, and the appearance of the finished lettering still depended largely on the skill of the operator.

To afford greater control, a stencil guide was developed on which all but a few letters were complete in outline. Shifting the guides with a shuttling motion permitted the breaks in the lines to be filled in. Like all stencils, these too covered up the lettering, and they also had to be supported slightly above the drawing surface so they could be shifted without smearing the work.



to LEROY®
was bound to come!



Instead of stencils, the LEROY Lettering Set has templates with grooved characters which guide the pen virtually by "remote control". In place of a hand-held pen, there is a movable scriber. It combines a lettering pen, a pin that fits in and follows the grooved characters, and a sliding pivot, and it holds them in triangular relationship. Because a straight groove in the template restricts the motion of the pivot, the movement of the pen is governed entirely by the movement of the tracer pin.

With the LEROY scriber, the lettering is done above the template where it is always visible and safe from smearing, instead of through a stencil. Each letter, numeral or symbol is formed completely with unbroken lines, without moving the template. Its size and shape are entirely controlled by the template grooves, so that rapid, uniform lettering is easy. By a simple adjustment of the scriber, either vertical or slant lettering is possible from the same template.

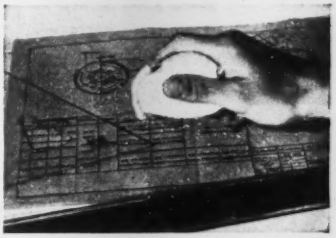
With a LEROY Lettering Set, you can draw capitals, lower case letters and numerals from a single template. You can form perfect letters on the first trial, and can develop speed with a few minutes' practice. No guide lines, no "roughing in", no erasing. You can be sure of uniformity throughout the drafting room, in pencil or ink.

There are LEROY templates and pens for every size and thickness of lettering normally required, as well as templates with engineering and scientific symbols and with special alphabets. K&E can also produce special templates for phrases, symbols or trade marks of your own design.

Ask your K&E Distributor or Branch to tell you about other LEROY features, or write to us for complete booklet on LEROY.

The Right Angle

You will find "Quick Set" the handiest large bow combination you've ever used. It has a trigger-quick action for coarse settings plus micrometer adjustment for precise settings. Complete with interchangeable pen and pencil inserts for circles up to 12½" diameter in pencil and 12" diameter in ink.



Cut down on the clean-up with an ABC* Dry Clean Pad. Tiny gum eraser particles sift through the mesh of the pad. Sprinkle them in a light film over the drawing surface before starting work and you'll have no graphite smears. Use it the same way for final clean up. Contains no grit or abrasive.

*Trade Mark

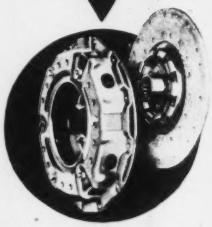
K+E

KEUFFEL & ESSER CO.

Drafting, Reproduction, Surveying Equipment and Materials, Slide Rules, Measuring Tapes

NEW YORK • HOBOKEN, N. J.
CHICAGO • ST. LOUIS • DENVER
SAN FRANCISCO • LOS ANGELES • MONTREAL

Dirt Moves Faster with a



"Sure-Footed PAYLOADER"

Frank G. Hough Company's PAYLOADER is noted for it's traction, flotation and mobility under heavy loads in sand, snow, gravel or mud. ROCKFORD CLUTCHES provide positive power transmission control in this rough, heavy-duty service. Let ROCKFORD clutch engineers help your designers develop controls suitable for the most rugged going your product must meet.

ROCKFORD CLUTCH DIVISION BORG-WARNER
313 Catherine Street, Rockford, Illinois, U.S.A.

B-W ENGINEERING MAKES IT WORK

B-W PRODUCTION MAKES IT AVAILABLE

ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCHES

"GUNITE" CONCRETE (Since 1915)

FOR • STEEL PLATE LINING • STEEL ENCASEMENT • BUILDING NEW WALLS • LINING WATER RESERVOIRS, TUNNELS AND SEWERS • PLATE LINING OF STEEL STACKS, BUNKERS, DUCTS • REPAIR OF DISINTEGRATED CONCRETE AND MASONRY • CANAL, DITCH AND DRAIN LINING

GUNITE CONCRETE & CONST. CO.
1301 Woodswether Rd., Kansas City 6, Mo.

District Branch Offices

Paul B. Watts, 228 N. LaSalle St., Chicago 1, Ill.
George R. Lewis Co., 2036 Queen Ave. S., Minneapolis 5, Minn.
B. H. Mueller Co., 6625 Delmar Blvd., St. Louis 5, Mo.
Ole K. Olsen Co., 823 Perdido St., New Orleans, La.
Philip D. Barnard, 2036 Addison, Houston 5, Tex.
Western Steel Prod. Co., 1755 W. 13th Ave., Denver 4, Colo.

DRILLING CONTRACTORS

Diamond and Shot Core Borings
Dry Sample Borings
Grout Holes and Pressure Grouting
Foundation Testing for Bridges, Dams and other Heavy Structures

Also

Manufacturers of Diamond and Shot Core Drills, Accessories & Equipment

SPRAGUE & HENWOOD, Inc.
Dept. E, Scranton 2, Penna.

MEN AND JOBS

Iowa State College then returned to Illinois for his doctorate.

Considered an authority on stresses and strains on curved beams, Moorman has frequently been called into professional work as a structural engineer and consultant.

Careers . . .

• **Appointed**—John C. Bumstead has joined Alfred Lefeber & Associates, consulting engineers and architects, Cincinnati. He had been assistant director of the Ohio River Valley Water Sanitation Commission following several years on the editorial staff of ENGINEERING NEWS-RECORD . . . **William A. Robinson,** associated with the Dravo Corporation since 1934, has been named assistant chief engineer of the company's contracting division . . . **Kenneth W. Riddle,** who has directed the evening college of Drexel Institute of Technology for the past four years, has been named dean of the college.

• **Elected**—**Edward J. Nunan** of the Buffalo Slag Co., last week took over duties as president of the New York State Society of Professional Engineers, Inc. . . . **John E. Carroll,** a vice-president of American Hoist & Derrick Company, St. Paul, has been named to the board of directors of that company. . . . New president of the Massachusetts Society of Professional Engineers is **Charles T. Chave,** assistant chief engineer, Badger Process division, Stone & Webster Engineering Corp. . . . Directors of the Euclid Road Machinery Co. have elected **Stewart F. Armington** chairman of the board succeeding **G. A. Armington** named honorary board chairman.

• **Honored**—Newark (N.J.) College of Engineering last week conferred an honorary degree of Doctor of Engineering upon **Charles H. Capen,** president of the American Water Works Association and chief engineer of the North Jersey District Water Supply Commission . . . **S. C. Hollister,** Dean of the College of Engineering at Cornell University will receive an honorary degree of Doctor of Science from the University of Wisconsin, June 20 . . . City Manager **Morris M. Cohn** of Schenectady, engineer and editor of "Wastes Engineering" this week was awarded an honorary Doctor of Science degree by Union College.

• **Retired**—**Arthur G. Thingulstad,** building engineer for the Ohio Bell Telephone Co., has retired after 32 years of service with that company.

750,000 *DRIVE-IT* FASTENINGS HERE!

Many thousands of dollars were saved by the modern *DRIVE-IT* powder operated fastening method used on the Park LaBrea project in Los Angeles. Over 750,000 drive pins fastened metal lath to concrete ceilings and floors from which wall partitions were secured.

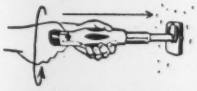
split-second fastening to concrete steel

EXCLUSIVE DRIVE-IT FEATURES

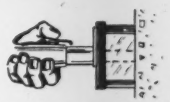
DRIVE-IT is the only powder-actuated tool approved by Underwriters' Laboratory.

Exclusive Swivel Safety Pad easily rotated for getting into close quarter work.

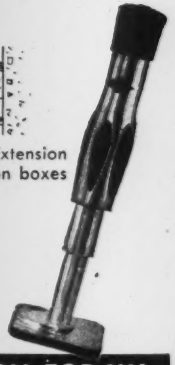
DRIVE-IT is the only powder-actuated tool which requires but one standard power load regardless of penetration desired.



DRIVE-IT cannot be discharged accidentally due to the push and turn sequence. This, plus the large safety pad makes *DRIVE-IT* triple safe.



Exclusive Automatic Barrel Extension for fastenings inside junction boxes or other recesses.



Drive-it "300", lowest cost fastening tool.... Low original cost and low operating cost.

a drive-pin for every job

OVER 50 TYPES AND SIZES

MAIL THIS COUPON TODAY!

Powder Power Tool Corp.
0716 S. W. Woods St.
Portland 1, Oregon

☐ Please send FREE catalogue and literature.

☐ I want a FREE demonstration of *DRIVE-IT*.

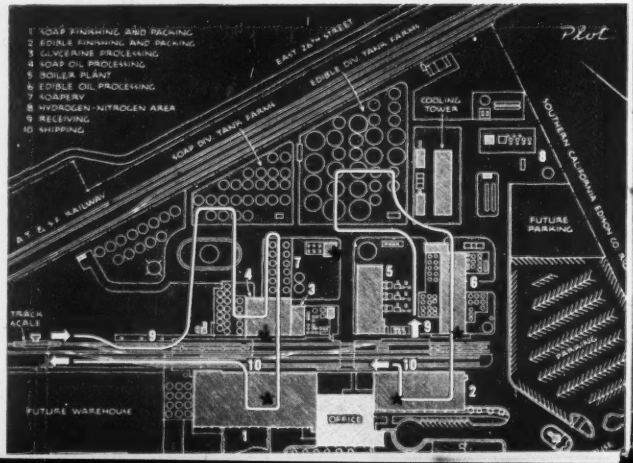
Name_____

Street_____

City_____ State_____

Office building of the new Lever Brothers plant, Los Angeles, California, reflects the trend of today's industrial design.

★ Six Westinghouse Power Centers, spotted in black, are the heart of the plant's electrical distribution system which provides reliable service under all conditions.



PLANNED POWER PAYS

They matched modern plant design with modern power distribution

This 25-million-dollar Lever Brothers plant incorporates the most modern advances in design, layout and construction methods. And its system for distributing electrical power is as modern as the plant—assuring uninterrupted service under all conditions.

The secondary network system was specified in the early planning days by Bechtel Corporation—the engineers and constructors—with Westinghouse assistance. It contains six interconnected power centers that maintain service even though an electrical disturbance may fault a primary line. Secondary faults are isolated quickly. The ultimate in reliable power is assured.

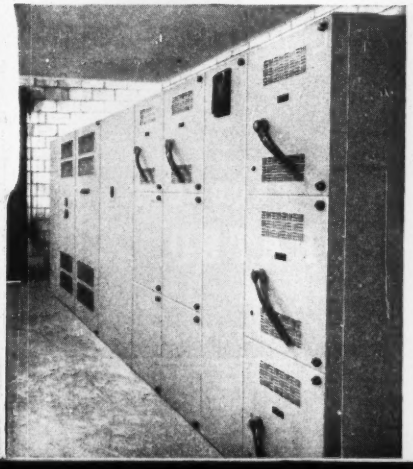
Early planning has also taken full advantage of the flexibility of factory-assembled Westinghouse Power Centers. These compact, standardized units save valuable space . . . minimize layout problems. Their dry-type transformers permit them to be located safely anywhere in the plant. Additional units can be added easily, as loads and capacity increase.

CONSIDER THIS: A plant's distribution system is a vital design consideration. It must be planned at the blueprint stage . . . treated as an integral part of the building or expansion program. Today, the power needs of a modern plant require this kind of planning—coupled with completely co-ordinated equipment.

Westinghouse offers you assistance on *both* of these requirements . . . and backs them with years of experience, gained throughout all industry. You benefit by getting more freedom in design techniques . . . by providing your customer with the best system economically possible for *his* plant.

There is one best system of distributing electrical power for *every* plant. Let Westinghouse help you select it on your next job. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94955

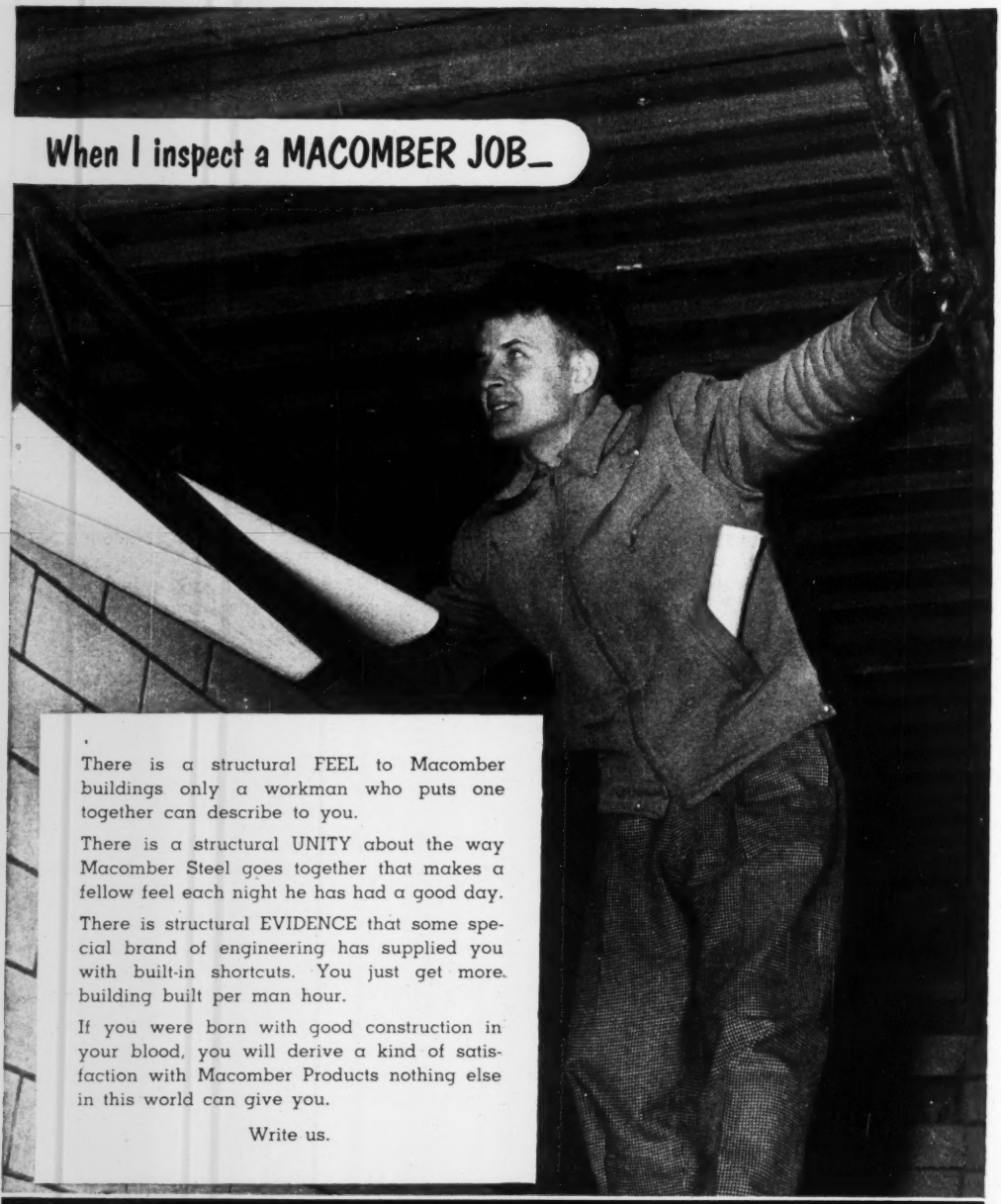
Space problems were minimized with six of these compact Westinghouse ASL Dry-Type Network Power Centers. They are standardized, factory-assembled units . . . can be expanded easily as power needs grow.



YOU CAN BE SURE IF IT'S Westinghouse

SYSTEM PLANNING

When I inspect a MACOMBER JOB—



There is a structural FEEL to Macomber buildings only a workman who puts one together can describe to you.

There is a structural UNITY about the way Macomber Steel goes together that makes a fellow feel each night he has had a good day.

There is structural EVIDENCE that some special brand of engineering has supplied you with built-in shortcuts. You just get more building built per man hour.

If you were born with good construction in your blood, you will derive a kind of satisfaction with Macomber Products nothing else in this world can give you.

Write us.

STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER • INCORPORATED

CANTON, OHIO

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

MEETINGS

Set Conference on clays

A conference on clays and clay technology will be held on the Berkeley campus of the University of California July 21 to 25, in cooperation with a number of agencies and organizations. The structure, fundamental properties, and methods of identification and investigation of the clay minerals, and their uses in various fields will be discussed by leading authorities on the subject.

Many of the prominent clay mineralogists of this country, and probably representatives from abroad, will attend the conference. The meetings will be open to all who are interested either theoretically or practically in any aspect of the clays.

The conference steering committee is composed of George S. Gates of U. S. Bureau of Mines, J. Schlocker of U. S. Geological Survey, M. D. Turner of California State Division of Mines, and I. Barshad, W. H. Somerton, and Joseph A. Pask, chairman, all of the University of California. R. E. Grim is the honorary chairman.

CALENDAR

Association of State Planning and Development Agencies, annual meeting, Nicollet Hotel, Minneapolis, Minn., June 15-19.

Conference on Marine Borers and Prevention of Deterioration in Waterfront Structures, St. Moritz Hotel, Miami Beach, Fla., June 11-13.

Conference, "Building in the Atomic Age", M.I.T., Cambridge, Mass., June 16-17.

American Society of Civil Engineers, spring meeting, Cosmopolitan Hotel, Denver, Colo., June 17-20.

Conference on Soil Stabilization, M.I.T., Cambridge, Mass., June 18-20.

American Society for Engineering Education, Darmouth College, Hanover, N. H., June 22-27.

National Businessmen's Conference on Urban Problems, Portland, Ore., June 23-24.

Forest Products Research Society, annual meeting, Milwaukee, Wis., June 23-25.

American Society for Testing Materials, 50th anniversary meeting, Hotel Statler, N. Y. City, June 23-27.

American Institute of Architects, Waldorf-Astoria Hotel, N. Y. City, June 23-27.

Symposium on Earthquake and Blast Effects on Structures, University of California, Los Angeles, Calif., June 26-28.

National Conference on Clays and Clay Technology, University of California, Berkeley, July 21-25.

National Surveying Teachers' Conference, Camp Blackduck, Minn., Aug. 3-8.

Mississippi River Parkway Planning Commission, La Crosse, Wis., Aug. 21-23.

Sept. 4—ENR's Annual Cost Issue

VIBER

Leadership starts on the drawing board...

where new products are constantly being developed to furnish you a complete line of superior vibration equipment.

and is proved in the field... where greater performance, more years of efficient work at low cost operation have made Viber standard equipment with leading contractors throughout the world.

Please write for Viber's new illustrated catalog on its standardized line and new products.

VIBER COMPANY

Concrete Vibrators Since 1931

Dept. 53, 726 South Flower Street • Burbank, California

there's a
YEOMANS
PLANT for
every waste
treatment
need

Extraordinary records for purification efficiency and for low costs of installation and operation are being established by Yeomans plants for treating industrial and domestic wastes.

Helpful bulletins, listed here, constitute a valuable library for quick reference.

AERO-FILTER SYSTEM—More than 100 plants in operation. High capacity, low momentary application rate . . . lowest installation and operating cost ..... Bulletin 6570

"WATER-WHEEL" SEWAGE DISTRIBUTOR — Positive-drive distributor for small community trickling filter sewage treatment plants. Simple to install and operate ..... Bulletin 6554

"SPIRAFLO" CLARIFIER—with tangential inlet into annular race. Increased flocculation due to upward travel through sludge blanket to weirs ..... Bulletin 6790

"STREAMLINE" SLUDGE COLLECTOR — Rectangular tanks for primary and final sedimentation ..... Bulletin 6750

PACKAGE AERIFIER—Activated sludge process. For small plants. Aeration and clarification in a single tank ..... Bulletin 6652

SLUDGE DIGESTER MECHANISM—Either semi-dome or I-beam arrangement available ..... Bulletin 6800

SHONE PNEUMATIC EJECTOR—The perfect answer where gallonage is limited but solids are not. Absolutely automatic and trouble-free. Mechanical or electrode-controlled ..... Bulletin 4000-C

SEWAGE AND TRASH PUMPS—Centrifugal—both vertical and horizontal ..... Series 6000

YEOMANS

YEOMANS BROTHER COMPANY
1445 North Dayton Street
Chicago 22, Illinois

Please send the following bulletins:

.....

.....

.....

Name .....

Company .....

Address .....

City ..... State .....

TESTS SLIPPERINESS—Unique "skid wagon" that is making tests on Tennessee highways to determine danger spots and help eliminate them.

Skid wagon tests Tennessee roads

The University of Tennessee College of Engineering, under contract with the State Highway Department, has built a unique "skid wagon" designed to test road slipperiness as the first step toward eliminating that hazardous condition.

Coupled with this is a state-wide drive to determine the worst danger spots. Highway district engineers are preparing a list of slippery highway areas for testing with the machine, which is a trailer with a concrete bed. It is built on a salvaged automobile axle, has regular hydraulic brakes, and a specially made, smooth tire on one side.

The tongue, which hitches to the pull truck, is hollow and within it is a rod connected to an oil-filled bellows. When the operator steps on the brake, the pull on the bellows will register on a gage which indicates the pounds of pull necessary to skid at that spot.

The first step in this state-wide testing is to set up a measuring stick. Known danger spots, obviously slick, and areas of high accident rates, will be tested, along with safe areas virtually devoid of accidents. From those findings, a scale will be set up. William Goodwin, U-T assistant engineer, is in charge of the test crew.

The next step is to study core samples from the tested areas. This will be done in the university's civil engineering laboratories. From this material, analysts hope to pin down the exact causes of excessive slipperiness in roads and make recommendations accordingly.

Howard University gets 600,000-lb machine

In preparation for completion of Howard University's new School of Engineering and Architecture building and facilities before September, 1952, the largest piece of new equipment was inspected recently by faculty members during final tests at Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa.

Purchase of a new Baldwin testing machine of 600,000-lb capacity is part of a $2,000,000 expansion program of the school at Washington, D. C. The present enrollment of 300 students is expected to increase to 400 as soon as the modern equipment and facilities are available. All of its 65 graduates this year had been accepted for jobs long before the end of the school year.

Although the primary purpose of the testing machine is instruction of un-

(Continued on page 94)

Cutting the buck on high steel

Leaning against the wind hundreds of feet up, these painters are doing fast, efficient work with DULUX Metal Protective Paints. As bridgemen say of reliable performers on the job, they "cut the buck."

Paint jobs done with DULUX primers and top coats mean real dollar savings, too. DULUX flows off the brush fast and smooth . . . hides wonderfully . . . gives quick-dry coverage up to 600 sq. ft. per gallon. And because it resists fading and cracking, fights the corrosive action of salt-laden fog, moisture and gases, DULUX shows performance records of 10-year, 12-year and even longer periods of complete protection.

So, for all types of structural steel maintenance painting, consult the Du Pont Sales Technician in your area. Or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

DU PONT

REG. U. S. PAT. OFF.

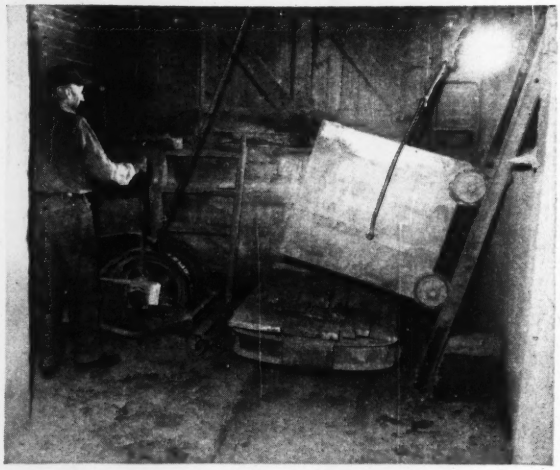
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

DULUX METAL PROTECTIVE PAINTS

Chemically engineered to do the job better

Pictures from Industry

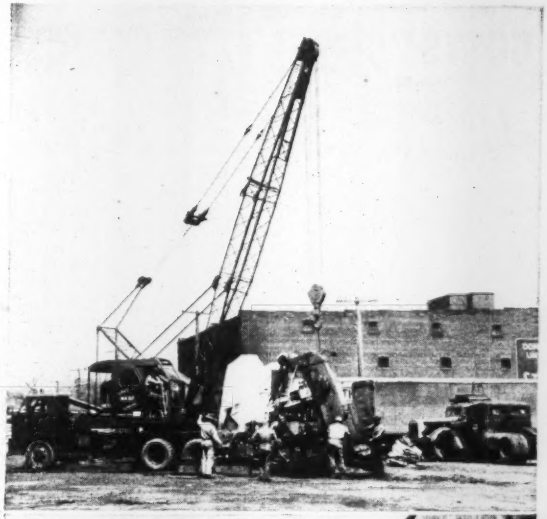
These are excerpts from stories in the current issue of American Hoist & Derrick Company's house magazine, the American Crosby Clipper. If your business involves the use of hoists, derricks, locomotive cranes, revolver cranes, Crosby Clips or other equipment in our line, why not let us put your name on the mailing list. Use coupon on right hand page, to start with the current issue.



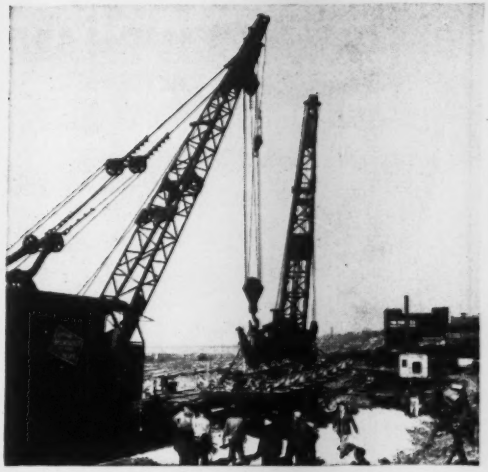
Up-and-down railway for ashes. At South Dakota State College, Brookings, S. D., this ingenious rail car runs both horizontally and vertically. Carrying ashes from the power plant, car is pulled upward by a smooth, sturdy American single-drum hoist, to dump into a hopper which loads trucks. The absolute faith of engineers in the power, safety and dependability of American Hoists has made them the world's largest-selling line.

Double lift closes Turnpike bridge. With beautiful precision, these four American stiffleg derricks are placing the last two girders in a New Jersey Turnpike bridge. The simultaneous lift was carefully planned to prevent any wracking of bridge members. Mounted on a pair of travelers, derricks had 115-foot booms, and were powered by American hoists of 200 H.P., equipped with torque converters and air controls. American designers build special derricks of every size, type and capacity, for jobs around the globe.

The AMERICAN HOIST line includes: Hoists • Derricks • Locomotive Cranes • Crawler Cranes • Revolver Cranes • Portable Material Elevators



Fighting the floods. In Omaha (above) and St. Paul (below), the work of valiant men and American cranes helped avoid tremendous losses in the recent floods. Omaha scene shows a new American 375 Truck Crane loading machine tools for removal to higher ground. On the St. Paul waterfront, American Crawler Crane in lower picture moved immense amounts of dirt to build protective dikes around threatened buildings.



Milwaukee Road steps ahead. These American locomotive cranes are "walking" 250 tons of freight car retarder parts into position at Menomonee River Valley yards of the Milwaukee Road. Automatic slowing of cars will help double the number of cars handled per day. On largest, most progressive railroads, American locomotive cranes handle all such heavy work at lowest possible cost.

American Revolvers on Garrison Dam. Dominating the scene at North Dakota's immense Garrison Dam project, two American Revolver Cranes serve tremendous areas with all the lifting power ever needed. Most of the major dams in America have been built with these great machines.

Modernize...economize...with

American Hoist

& Derrick Company

ST. PAUL 1, MINNESOTA

MAIL THIS COUPON

CLIPPED FROM ENG. NEWS-RECORD JUNE 12, 1952

American Hoist & Derrick Co.
St. Paul 1, Minnesota

☐ Please add my name to your mailing list to receive your magazine, the American CROSBY CLIPPER.
☐ Also send more information on following equipment:

_____

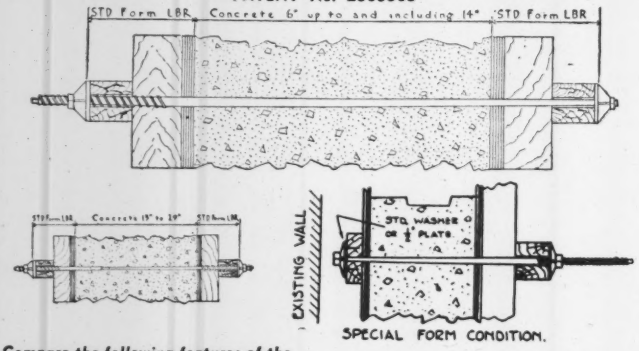
*Name*_____
*Company*_____
*Type of Business*_____
*Address*_____
*City*_____ *State*_____

Handiwinch • Roofers Hoist • Marine Deck Machinery • Sugar Cane Handling Equipment • Car Pullers • Blocks and Sheaves • Crosby Wire Rope Clips

CUT FORM CLAMP LABOR COSTS!

9,000 Pound TAPER-TYE CONCRETE FORM CLAMP

PATENT No. 2365563



Compare the following features of the 3 piece **TAPER-TYE** *with 5 piece* **SHE BOLT ASSEMBLIES**

	Assembly Cost	Stripping	Re-Assembly Cost	Center or Tie Rods		
				Up to 14" Concrete	15" to 29" Concrete	30" to 46" Concrete
TAPER-TYE	None	Approx. Three To One *	None	None	She-Bolt Extension	One inexpensive Coupling
5 Piece She-Bolt Assembly	Approx. 10¢ per set		Approx. 10 ¢ per set	2" to 9" Tie Rods	10" to 24" Tie Rods	25" to 41" Tie Rods

* As quoted by most superintendents who have used both types.

Write for Further Information

H. J. KRUEPER CO.

535 S. CLARENCE ST. Phone ANgelus 98204 LOS ANGELES 33, CALIF.

. . . And this bridge will open. But upon your first call, The Earle Gear and Machine Company will be ready to serve you with all of their experience, skill and facilities. Famous for efficient and unfailing bridge operating machinery, Earle Gear can also provide—promptly and accurately—almost any size and type of gear. Earle engineers are always available and pleased to assist you. In many cases, our accumulated knowledge and experience can materially *lower* the costs. . . or *increase* the efficiency of your machines. Write for information, catalogs or service. THE EARLE GEAR & MACHINE COMPANY, 4717 Stenton Avenue, Philadelphia 44, Pa.

It's good business to do business with EARLE EARLE GEARS

dergraduate students in the testing of steel, timber, and concrete structures, plans are to make the machine available for research in materials testing and in commercial and acceptance testing.

The machine stands 30 ft above the platform and has a vertical clearance of 22 ft. for test specimens in tension or compression. Horizontal clearance between columns is 6 ft. Hydraulic loading equipment and motors for positioning the cross heads, which are below the platform, will be below floor level when installed.

Maximum length of specimens for transverse tests will be 42 ft. Loads are measured by an independent hydraulic system based on the Emery cell between the crosshead and the yoke. This cell is connected by flexible pipe to a Tate-Emery indicating system in the control cabinet, to be located conveniently nearby.

British test house types to find most economical

Several new designs for semi-detached houses will be used in experiments being undertaken by the Building Research Station at Northolt, England. A total of 440 houses, all with three bedrooms, will be put up on the Fairview and Limetrees Estates, which belong to the Ealing Council.

The experiment, the largest of its kind, is intended to provide information on methods of cutting building costs. When the houses are completed they will be taken over by the council at a price comparable with that currently paid for the traditional house of similar size.

More than 100 of the Northolt houses will have a new foundation—a concrete frame consisting of precast beams fixed in concrete piles 8 ft deep.

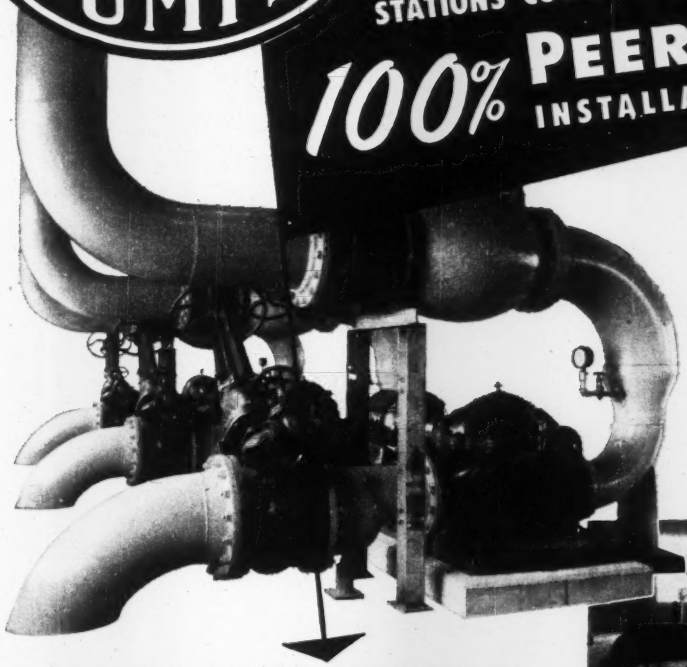
One group of homes will make extensive use of internal sections made in factories. The prefabricated parts will be of a size which can be handled by two men.

Another group will make use of large prefabricated sections, including complete interior wall units. Concrete slabs will be used for the exterior walls of some of the houses.

Private contractors will be employed, and progress charts will be made week by week. Houses of conventional styles will be included in the project in order to provide on-the-spot comparisons in economy of labor and other costs. It is expected that this will be helpful to builders and buyers.

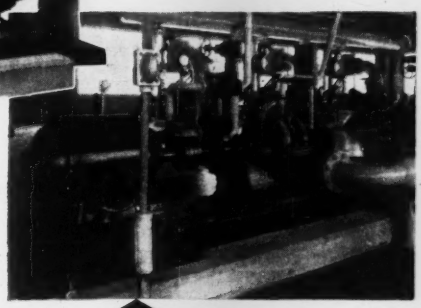
PEERLESS PUMPS

NATURAL GAS PIPE LINE COMPRESSOR STATIONS' COOLING WATER PUMPS ARE 100% PEERLESS INSTALLATIONS

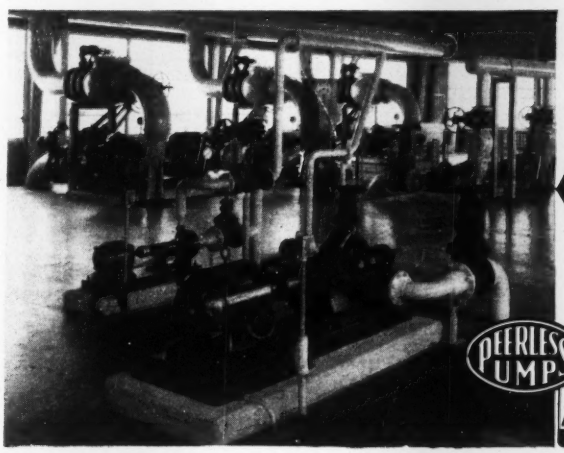


One of the most recently completed natural gas pipe lines runs from Texas to Illinois. Views here show a 100% installation of Peerless pumps in one of the typical 10,000 hp compressor stations now in operation on this line. Pumps are installed in parallel batteries to handle water flow through dual cooling units. One unit cools jacket water, the other unit cools water used in heat exchange units of the lube oil cooling system.

PEERLESS SINGLE STAGE & MULTI-STAGE HORIZONTAL PUMPS HANDLE WATER TO STATIONS' DUAL COOLING UNITS



View above shows typical station arrangement of Peerless pumps installed in one of the compressor stations on the line. Single stage Peerless Type A and multi-stage Peerless Type TU pumps, both of horizontal split case design, are used to handle water to cooling systems.



View at left shows one of the multi-stage Peerless Type TU horizontal split-case pumps installed in these stations. Ample overload capacity is provided so that one or more pumps in each battery can be shut down without impairing cooling water circulation.

Write today for descriptive engineering Bulletins on both Type A and Type TU Peerless pumps.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Address inquiries to Factories at:
Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix, Albuquerque, N. M.; Tulsa

Fast Job Starts... LOWER COSTS

with UNI-FORM Panels

"TOPS" in CONCRETE FORMING

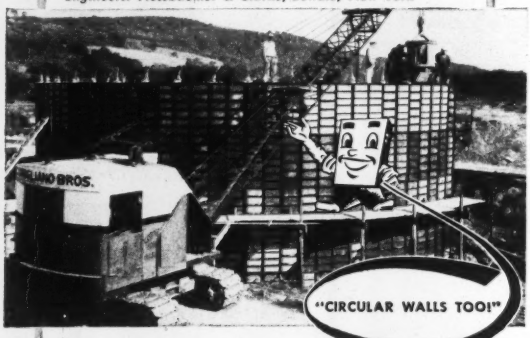
Elmira Sewage Treatment Plant, Elmira, New York
General Contractor: Corigliano Brothers, Ossining, New York
Engineers: Nussbaumer & Clarke, Buffalo, New York

Form ALL Walls . . . . Straight, Circular and "Y" with ONE System!

- FASTER JOB STARTS . . . UNI-FORM Panels are ready to use when they reach the job.
- AUTOMATICALLY ACCURATE . . . Simple mechanical assembly
- EASIEST FORM ERECTION . . . Lock into rigid, integral unit
- MINIMUM ALIGNMENT and BRACING . . . Required on 1 SIDE ONLY

SAVE TIME . . . LABOR . . . MATERIAL

Write today for full details on Universal's "Sewage Treatment Plant Concrete Forming Package"... UNI-FORM Panels, "Y" Wall Forms, FREE Engineering and Field Service. It's designed to make money for you!



Standard UNI-FORM Panels form the aeration tank. Alignment and bracing *on inside only* give clean, safe outside working area.

UNIVERSAL
FORM CLAMP CO.
Concrete Form Specialists Since 1912

GENERAL OFFICES AND FACTORY
1238 N. KOSTNER • CHICAGO 51, ILLINOIS

OFFICES AND WAREHOUSES:

SAN LEANDRO, CALIF.	2051-9 Williams St.
HOUSTON, TEXAS	2314 Preston Ave.
CLEVELAND, OHIO	24901 Lakeland Blvd.
BALTIMORE, MD.	661 S. Monroe St.
SWAMPSCOTT, MASS.	51 Barnstable St.

Service Wherever You Build . . . Coast-to-Coast

Copyright 1953 by Universal Form Clamp Co., Chicago 51, Ill.

OBITUARIES

H. R. Standiford, 65, an engineer and structural designer for 42 years, died in N. Y. City, June 1. He was a C.E. graduate of Cornell in 1910. From then till 1915 he designed structural steel bridges for the American Bridge Co. He was construction supervisor for the J. G. White Corp. from 1918 to 1921. Then he was assistant chief engineer of the Wm. F. Kenney Co. He returned to the J. G. White Corp. in 1941 as a project manager.

Jay Clude Furry, 63, engineer and chief of the estimating section, technical services, Veterans' Administration since 1945, died May 26 in Washington, D. C. Going to Washington 37 years ago, he served from 1915 to 1933 as an estimator and engineer with the Interstate Commerce Commission and from 1934 to 1945 as an architectural engineer with the Public Buildings Administration. Prior to entering government service, he worked as an engineer with firms in Altoona, Pa. He was graduated from the University of Pennsylvania.

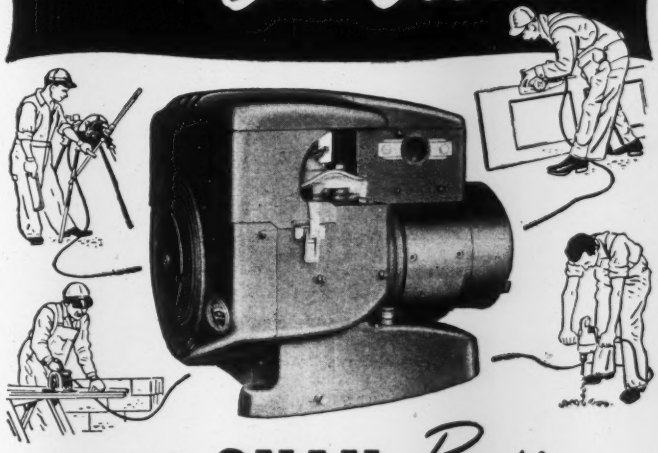
Charles D. Bassett, 49, civil engineer and chief of construction for the U. S. Engineers in the Jacksonville, Fla., office, died recently. He was a graduate of the University of Tennessee and had been with the U. S. Engineers for 21 years. He worked on flood control at Memphis, Tenn., and was also on these projects—Morris Dam, revetments and seawall in Kentucky; Passamaquoddy, Me., Norfolk Dam, and he worked plans for the Florida canal. He had been in the Pittsburgh and Little Rock, Ark., offices.

Frank E. Kane, 68, an engineer for the Illinois state department of waterways for 35 years, died May 25 in Springfield, where he had been for the last several years. Previously he had been stationed in Chicago 20 years.

Jessel Whyte, 61, president and general manager of the Macwhyte Co., Milwaukee, Wis., steel cable manufacturers, died May 28. He was a Cornell graduate. During the first world war he was a captain in the Army Engineers. He was a civic leader in Milwaukee and for 21 years was a member of the Wisconsin Board of Vocational and Adult Education.

Walter B. Haines, 68, a supervising engineer with the Pennsylvania State Highways Department for 12 years, died May 16 at Philadelphia. He had been employed by Philadelphia for 20 years before going with the state.

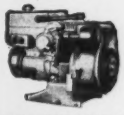
Save Manpower-
Cut Costs!



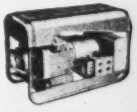
with **ONAN** *Portable*
ELECTRIC PLANTS

Use cost-cutting electrical tools on every job from start to finish, even where highline power is not available. Lightweight, heavy-duty Onan Electric Plants supply plug-in electricity *anywhere* for power saws, pipe-threaders, drills, planers, vibrators, repair-shop tools, other motor-driven equipment and lights. Lightweight, air-cooled models: 400 to 5,000 watts. Water-cooled plants to 35,000 watts.

A MODEL FOR EVERY CONSTRUCTION JOB



ONE-CYLINDER MODELS—Lightweight, heavy-duty air-cooled. 400 to 1,000 watts A.C. – 750 to 1,500 watts D.C.



TWO-CYLINDER MODELS—Horizontally-opposed air-cooled. 1,500 and 3,000 watts A.C.— 2,000 and 5,000 watts D.C.

WATER-COOLED MODELS — 5,000 to 35,000 watts, A.C. Powered by heavy-duty industrial gasoline engines.

Write for Folder

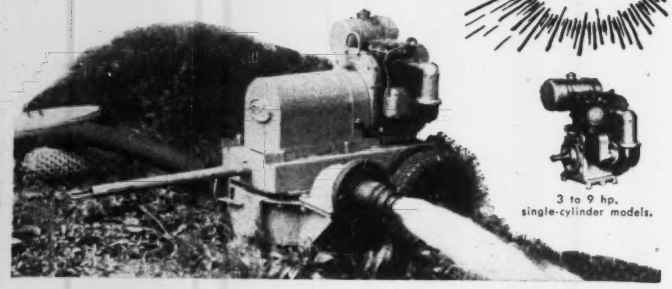
Onan PRODUCTS

D. W. ONAN & SONS INC.

5737 UNIVERSITY AVE. • MINNEAPOLIS 14, MINN.

WISCONSIN-POWERED Rex Pump

POWER TO FIT THE MACHINE — POWER TO FIT THE JOB

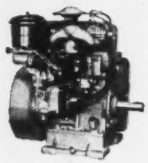


3 to 9 hp. single-cylinder models.

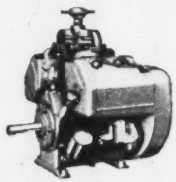
Designed to meet de-watering requirements in which large amounts of solid materials are present, this 4" Closed Diaphragm Rex Pump will handle up to 6,000 gals. per hr. on a 10-ft. suction lift. It's built by Chain Belt Co., Milwaukee, and powered by Model AKN 4-cycle single cylinder Wisconsin AIR-COOLED Engine, turning up 3¾ hp. at 2100 rpm.

Like all Wisconsin Air-Cooled Engines, from 3 to 30 hp., this rugged little power unit runs on Timken tapered roller bearings at *both ends* of the crankshaft. Dependable ignition is supplied by a rotary type, high tension magneto that mounts *outside* for easy servicing when needed . . . and it's equipped with an impulse coupling for fast starts in any weather.

For "Most H.P. Hours" of on-the-job service . . . specify "Wisconsin Engine Power" — single Cyl., 2-Cyl., and V-type 4-Cyl. models, 3 to 30 hp.



7 to 13 hp. 2-cylinder models.



15 to 30 hp. V-type 4-cylinder models.

MOST H.P. HOURS

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

Stang WELLPOINT SYSTEM

For KNOW-HOW ENGINEERING SUPERVISION EQUIPMENT *to keep jobs* DRY

The Stang System has proved its efficiency and economy on both large and small jobs all over the United States. Stang engineering and supervision in planning, installation and operation insures a DRY JOB at all times.

JOHN W. STANG CORPORATION

2 Broadway, New York 4, N.Y. — 2123 S. 56th St., Omaha, Neb. — 8221 Atlantic Ave., P.O. Box 631, Bell, Cal.

LEGAL

Amount due contractor under cancelled contract

A contractor agreed to erect an apartment house in accordance with certain plans and specifications prepared by a designated architect. Payment for the work was to be made on the basis of the cost of the erection of the building and "in addition to said cost the sum equal to 10% of the aforesaid total cost as the profit to said contractor."

The contract after setting forth the manner in which payments were to be made to the contractor, contained a provision to the effect that if the owner should "feel that the prices charged for labor or materials are excessive or that the conduct of any person or persons working under the supervision and direction of said contractor are doing or committing anything that he deems improper," the owner shall have the right to cancel the contract upon notifying the contractor of such cancellation of the contract.

The contract also provided that: "If such event [cancellation of contract] takes place the parties hereto shall compute the total cost of construction and labor up to that date, and to pay 10% thereof to the contractor as his profit up to that date."

The owner exercised the option given under the above clause to cancel the contract and a dispute arose as to whether the contractor was entitled to receive his 10% profit on material delivered to the job but not incorporated in the work. The court held that the contractor was entitled to recover 10% of the cost of such materials.[1]

The court in its opinion stated: "One of the contractor's responsibilities specifically stated in the contract, was to 'find and provide such good, proper and sufficient materials of all kinds whatsoever, as shall be proper and sufficient for the completing and finishing all the said apartments and buildings.' This was an obligation on his part, the performance of which presumably was of some consequence in arriving at the compensation to be paid. His knowledge and ability to comply with it in this period of scarcity and shortage of many basic commodities were not unimportant. The materials on the site of the job were obtained to be used in the construction of the building and admittedly were necessary for the comple-

tion of the job. The contractor having in good faith performed that part of the contract, we find nothing in its terms indicating an intent to penalize and deprive him by cancellation of profits he would otherwise have made.

"This clause reflects upon and is to be taken into consideration in determining the amount due. Coupling it with the cancellation clause, 'the parties hereto shall compute the total cost of the construction and labor up to that date, and to pay 10% thereof to the contractor as his profit up to that date,' it is clear that the language used expresses an intent to include in the total cost of production the cost of labor, the materials used in the erection of the building and the materials on the site of the job purchased to be used in and necessary for the erection of the building.

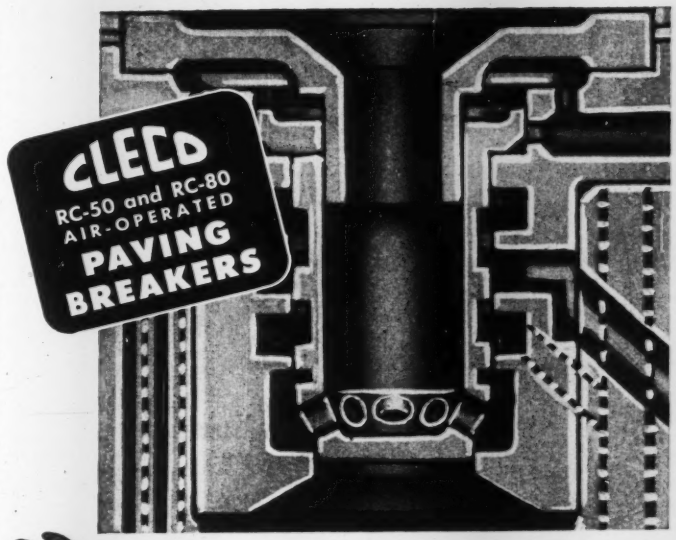
"The converse interpretation of the agreement as urged by the owner would permit him, under this clause, to cancel the contract after all the materials required had been assembled at the site but before any construction had actually commenced. Thus he would secure gratis the work of a contractor whose knowledge, reputation, contacts, prestige and standing enabled him, despite the recurrent shortages so common in recent years, to find, purchase and have delivered the required supplies where others might fail. In the absence of a specific expression to that end, it cannot be held that the rendering of such valuable services was intended to be gratuitous."

(1) Washington Const. Co. v Spinella, 84 A. 2d 617. Supreme Court of New Jersey, Nov. 26, 1951.

Warranty as to quality

A painting contract provided that the contractor, for a stipulated consideration, "agrees to furnish all material, tools, labor and equipment to complete the work stipulated in this contract in a good and workmanlike manner."

The court held that such provision of the contract constituted an express warranty as to the quality of the work.[1] The court in its opinion stated: "In determining the questions of law involved in this appeal, it is important to study this provision of the contract very carefully. The painting contractor did not merely represent that the labor would be performed in a good and workmanlike manner, but agreed to furnish all material, tools, labor and equipment to complete the work in a good and workmanlike manner. By any reasonable construction of the phraseology used in this contract, it must be concluded that the warranty



THIS VALVE MAKES THEM BETTER

The valve used in Cleco RC-50 and RC-80 Paving Breakers is similar to the type used in many large mining drills. Since it controls *both live air and exhaust* during power and return strokes, it gives Cleco Paving Breakers more sustained power, faster action, less recoil and longer life than other breakers in their classes.

Hard hitting and fast action **result because air in front of the piston is exhausted to atmosphere — through the valve — during entire power stroke. Live air — rather than pressure in front of piston — trips the Cleco valve for the return stroke.**

Less recoil **is a result of the valve action. Since air in back of piston is exhausted through valve during return stroke, avoiding recompression, less air is required to return the piston and recoil is reduced.**

Longer life and sustained power between repairs **is possible because valve action is independent of piston wear . . . a full stroke is assured even with a worn piston.**

Many contractors report that Cleco Paving Breakers hit harder and faster, have less recoil, produce more work per man-hour and cost less to maintain than any other tools in their classes.

Write us, and a Cleco field engineer will arrange for a demonstration on your job at your convenience.

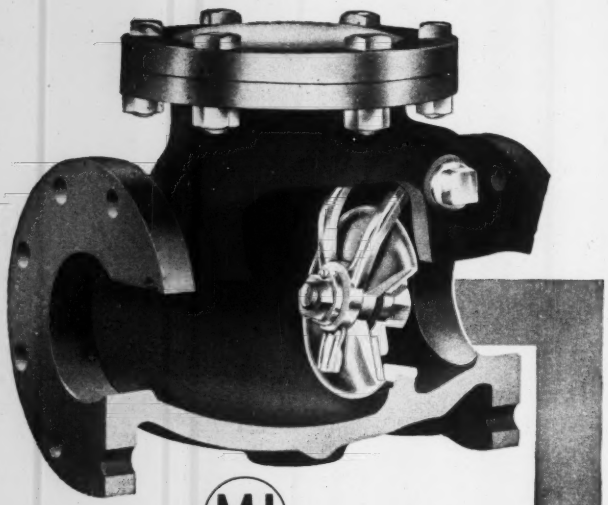
CLECO AIR TOOLS

CLECO DIVISION

of the REED ROLLER BIT COMPANY

5125 Clinton Drive — Houston 20, Texas

3519



M&H

CHECK VALVES

Cutaway view above shows how disc is mounted on clapper arm. Disc facing is bronze or rubber. Seats are bronze. M & H Check Valves may be installed in horizontal or vertical position. Disc swings entirely clear of waterway and will not stick in open position. Two bosses on each side may be tapped for bypasses and two bosses on bottom may be tapped for draining.

Furnished with flanged, screwed, hub, mechanical joint or Universal end connections. Flanged check valves can be furnished with outside lever and weight or outside lever and spring. Both the weight or the spring are adjustable for positive and easy opening and closing, and to minimize slamming and banging of the disc.

Underwriters' and Associated Factory Mutuals listed and approved. Complete information on request. Write or wire M & H Valve and Fittings Company, Anniston, Alabama.

M&H PRODUCTS FOR WATER WORKS • FILTER PLANTS INDUSTRY • SEWAGE DISPOSAL AND FIRE PROTECTION

"Gunite" ..... the sand-cement product of the "CEMENT GUN," for Concrete and Masonry Repairs, Pre-Stressed Tanks, Steel Encasement and for lining Reservoirs, Sewers and Tunnels.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.
MANUFACTURERS OF THE "CEMENT GUN"

as to the quality of the job not only applied to the labor, but also to the material, tools and equipment. It seems to this court that this clause clearly reveals the intention of the contractor to warrant the quality not only of the labor, but also the quality of the materials. No particular form of words is essential to a warranty, it is a question of the intention of the parties."

"It is true that in the absence of an express warranty as to the quality of the materials, the contractor would not be liable for the quality of the paint under an implied warranty, if latent defects were unknown to him. Under such circumstances, the defendant under the implied warranty might seek redress against the manufacturer. However, when the contractor expressly warrants the quality of the materials, he assumes the risk in the event the materials are bad. Under this contract, the contractor warranted both the quality of the materials and the labor."

(1) Smith v Phillips, 110 N.Y.S. 2d 12, Broome County Court, N. Y., Jan. 11, 1952.

Failure to sign contract affects contractor's claim

"When, under a valid contract to perform a specified work for a specified price, the contractor has done part and has been prevented from performing completely through the wrongful intervention of the other party, the measure of the contractor's damages is generally, for the work actually performed, such a proportion of the entire price as the fair cost of that work bears to the fair cost of the whole work, and, in respect to the work not performed, such profits as he would have realized as a result of complete performance."[1]

In the above case, while all the terms of the contract had been agreed upon, the parties did not intend to bind themselves until the agreement had been reduced to writing and signed by the parties. The owner, however, before the contract had been executed directed the contractor to proceed with the work and then later prevented the contractor from proceeding with the work. In view of the fact that the contractor conceded that the contract for the performance of the work had never been consummated, the court limited the recovery of the contractor to the value of the part of the work that had been performed.

(1) Goldman v Shapiro, 84 A. 2d 628, Superior Court of New Jersey, Appellate Division, Nov. 27, 1951.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)

In dredge-building, there's no substitute for

UNDIVIDED RESPONSIBILITY

Selecting Bucyrus-Erie to build your dredge means that responsibility for it is undivided from design through construction.

Your job is surveyed in detail to determine the proper dredge design. Many years of varied engineering experience provide the background for thorough analysis of your dredging problems and recommendations for their solution.

Construction facilities unsurpassed in the industry go into the building of the dredge. Castings, forgings, weldments, heat treatment, and machining are subject to rigid laboratory control to make a top quality product. High-grade workmanship under close inspection assures a finished machine.

Assembly and final testing are under the supervision of Bucyrus-Erie engineers — the final product must meet specifications.

This undivided responsibility produces a dredge capable of long-time outstanding performance for *your* work.

120D52

BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN

PROFESSIONAL SERVICES

Cards arranged by states, cities, names

Additional cards on following pages

Polk, Powell and Hendon

Engineers—Consultants

Harry H. Hendon
Hugh A. Powell

Water Systems, Sewers and Sewage Treatment Plants, Steam and Hydro Plants, dams, drainage, industrial buildings, municipal planning reports, plans, estimates and construction supervision.

620 Chamber of Commerce Bldg.,
Birmingham 3, Ala.

Palmer and Baker, Inc.

Consulting Engineers—Architects

For Problems of Transportation
Subaqueous Vehicular Tunnels
Rock Tunnels
Utility Tunnels
Bridges
Grade Separations
Highways
Airports
Traffic Studies
Parking Problems
Waterfront & Harbor Structures
Complete Materials, Chemical and Soils Laboratories.

Mobile, Ala. - Houston, Tex.

John S. Cotton

Consulting Engineer

Hydroelectric, water supply, irrigation, and multiple purpose projects; flood and erosion control; river basin development planning; dams and their foundations; tunnels; marine structures; valuations; rates.

28 Brookside Dr., San Anselmo, Calif.

Meyerdick and Nelidov

Consulting Engineers

Structural-Mechanical-Civil-Hydraulic
Fixed & Movable Dams-Flood Control
Power-Water Supply-Irrigation
Drainage-Navigation

525 Market St. Underwood Bldg.
San Francisco, Calif. or
P.O. Box 709, Roseville, Calif.

International Engineering Company, Inc.

ENGINEERS

Investigations - Reports - Design
Procurement - Field Engineering
Domestic and Foreign
74 New Montgomery St.
San Francisco 5, California.

Heron Engineering Co.

Chemical, Mining, Industrial and Hydraulic Plants, Irrigation, Water Supply, Power and Sewerage Systems, Large Rockfill Dams, Airports, Oil, Gas and Water Pipe Lines.
2000 So. Acoma, Denver 10, Colorado
Chama, New Mexico.

Duval Engineering & Contracting Co.

General Contractors

FOUNDATION BORINGS
For Engineers and Architects.

Jacksonville, Florida

Rader Engineering Co.

Water Works, Sewers, Refuse Disposal, Ports, Harbors, Flood Control, Bridges, Tunnels, Highways, Airports, Traffic, Foundations, Buildings, Reports, Investigations, Consultations

1615 duPont Building Miami, Florida

Law-Barrow-Agee Laboratories, Inc.

Soils Engineers & Consultants

Soil Testing—Soil Boring—Rock Drilling—Load Testing—Field Control
Engineering Studies—Chemical Analysis—Physical Testing
Box 1558 Atlanta 1, Ga.
Serving the entire South

Patchen & Zimmerman

Engineers

Construction Plant, Cofferdams, Structures, Industrial Plants, Dams, Sewerage and Sewage Treatment, Water Supply and Treatment. Supervision, Surveys, Reports.

Augusta, Ga. Anniston, Ala.

Consoer, Townsend & Associates

Water Supply, Sewerage, Flood Control & Drainage, Bridges, Express Highways, Paving, Power Plants, Appraisals, Reports, Traffic Studies, Airfields, Gas & Electric Transmission Lines.
351 East Ohio St., Chicago 11, Illinois

E. J. Albrecht Company

Engineers—Contractors

Steel, chemical and power plants, Dams, flood control projects, railroads, Bridges, tunnels, heavy excavation.

2626 West 26th Street, Chicago 8

Alvord, Burdick & Howson

Charles B. Burdick
Louis B. Howson Donald H. Maxwell
Consulting Engineers

Water Works — Sewerage
Water Purification — Sewage Treatment
Flood Relief — Power Generation
Drainage — Appraisals

Room 1401
20 North Wacker Drive, Chicago

Data Engineers, Inc.

Engineering that "Counts"

Designers & Manufacturers of Data Recording Instruments

4608 Ravenswood Ave., Chicago 40, Ill.

De Leuw, Cather & Company

CONSULTING ENGINEERS

Transportation, Public Transit and Traffic Problems

Industrial Plants — Grade Separations
Railroads — Expressways
Subways — Tunnels
Power Plants — Municipal Works

150 North Wacker Drive
Chicago 6, Ill.

79 McAllister Street
San Francisco 2, Calif.

Greeley and Hansen

Engineers

Water Supply, Water Purification
Sewerage, Sewage Treatment
Flood Control, Drainage, Refuse Disposal
220 S. State Street, Chicago 4

Hazelet & Erdal

CONSULTING ENGINEERS

Fixed Bridges, Movable Bridges, Industrial Plants, Expressways, Airports, Dams

Monadnock Block, Chicago 4, Ill.
Dixie Terminal Bldg., Cincinnati 2, O.
Commerce Bldg., Louisville 2, Ky.

Pioneer Service & Engineering Co.

Consulting and Design Engineers
Operations - - - Purchasing
Steam - - Hydraulic - - Gas
Public Utilities - - - Industrials
281 So. La Salle St. Chicago 4

Sargent & Lundy

ENGINEERS

Steam and Electric Plants
Utilities—Industrials
Studies—Reports—Design
Supervision
Chicago

Soil Testing Services, Inc.

Theo. W. Van Zelst Carl A. Metz
John P. Gnaedinger

Soil Borings — Rock Coring
Engineering Testing of Soils
Soil & Foundation Reports

4520 W. North Ave. Chicago 39

Wight and Company

Consulting Engineers

Airfields — Municipal Improvements
Sewage Disposal — Pavements — Drainage Surveys

1008 Curtiss St. Downers Grove, Ill.

Jenkins, Merchant & Nankivil

Consulting Engineers

Municipal Improvements — Sewerage
Power Development — Water Systems
Traffic Surveys — Industrial Plants
Flood Control — Recreational Facilities
Airports — Investigations and Reports
805 E. Miller St., Springfield, Ill.

Chas. W. Cole & Son

Sewerage, Sewage Treatment, Industrial Wastes, Water Supply, Water Treatment, Airports, Industrial Buildings.
Chas. W. Cole, Sr. Chas. W. Cole, Jr.
Ralph J. Bushee, M. J. McErlain

220 W. LaSalle, South Bend, Ind.

Stanley Engineering Company,

Consulting Engineers

Airports - Drainage - Electric Power
Flood Control - Industrial - Rate Studies - Sewerage - Valuations - Water Works
Hershey Building, Muscatine, Ia.

Eustis Engineering Company

FOUNDATION AND SOIL MECHANICS INVESTIGATIONS

Soil Borings — *Laboratory Tests*
Foundation Analyses — *Reports*

2635 Airline Highway
New Orleans 20, La.

Whitman, Requardt and Associates

Engineers — Consultants

Civil — Sanitary — Structural
Mechanical — Electrical
Reports, Plans, Supervision, Appraisals
1304 St. Paul Street
Baltimore 2, Maryland

Chas. T. Main, Inc.

Engineers

Design and Supervision of Construction for Industrial Plants
Electrical, Steam and Hydraulic Engineering
Investigations, Reports and Appraisals
Chamber of Commerce Bldg.
80 Federal St., Boston, Mass.

Metcalf & Eddy

ENGINEERS

Investigations Reports Design
Supervision of Construction and Operation
Management Valuation Laboratory

1300 Statler Building, Boston 16

Philip B. Streander and Affiliates

Consulting Sanitary Engineers

Water Supply, Treatment, Distribution
Sewage, Sewage Treatment
Plans, Supervision, Reports
132 Nassau St. New York 7, N. Y.
683 Atlantic Ave. Boston 11, Mass.

Faulkner & Orpin

Engineering Consultants

Civil, Mechanical and Electrical
Market Consultants, Technical Writing and Sewerage and Water
80 K Street — Kings Terminal
South Boston 27, Mass. — SO. 8-2903

Black & Veatch

Consulting Engineers

Water - Sewage - Electricity - Industry

Reports, Design, Supervision of Construction, Investigations, Valuation and Rates.

4706 Broadway, Kansas City, 2, Mo.

Burns & McDonnell

Consulting and Designing Engineers

P. O. Box 7088, Kansas City 2, Mo.
1404 E. 9th St., Cleveland, 14, Ohio

Harrington & Cortelyou

Consulting Engineers

Frank M. Cortelyou
E. M. Newman F. M. Cortelyou, Jr.
Movable and Fixed Bridges of All Types, Foundations, and Related Structures.
1004 Baltimore Kansas City 6, Mo.

Russell and Axon

Consulting Engineers

Civil — Sanitary — Structural
Industrial — Electrical
Rate Investigations

408 Olive St. St. Louis 2, Mo.
Municipal Airport Daytona Beach, Fla.

Sverdrup & Parcel, Inc.

Consulting Engineers

Bridges, Structures and Reports, Industrial and Power Plant Engineering.
Syndicate Trust Bldg., St. Louis 1, Mo.
220 Bush St., San Francisco 4, Calif.

William J. Wenzel

Consulting Engineer

Great Falls, Montana

Developing the Great Northwest

Greer & McClelland

Consulting Engineers

FOUNDATION INVESTIGATIONS

98 Greenwood Ave. Montclair, N. J.
2649 N. Main St. Houston, Texas

Edwards, Kelcey & Beck

Reports, Design Supervision, Expressways, Port & Harbor Works, Terminals, Tunnels, Bridges, Water Supply, Industrial Plants, Traffic and Management Studies.
3 William Street 250 Park Avenue
Newark 2, N. J. New York 17, N. Y.

W. W. Slocum & Co.

ENGINEERS

Industrial - Design - Management
National Newark Building
744 Broad St., Newark 2, N. J.

Frank E. Harley and Associates

Consulting Engineers

Design, Surveys, Plans and Construction Highways, Sewerage and Sewage Treatment, Water Supply and Purification, Municipal Problems.
Harley Bldg., 260 Godwin, Wycoff, N. J.

Benjamin L. Smith & Associates

Engineers

Investigations—Reports
Designs—Supervision—Valuations
Municipal Engineering and Public Utilities
11 North Pearl St. Albany 7, N. Y.

Lester Associates, Inc.

Designers and Manufacturers of

Training Devices—Visual Aids
Industrial Planning Models
Animated Flow Charts — Relief Maps
Brochure on Request
Hastings-on-Hudson, N. Y.
HAstings 7-4434—4828

E. Lee Heidenreich, Jr.

Consulting Engineer

Quarries — Plant Layout
Crushing Plants — Design
Milling Plants — Appraisals

75 Second Street, 9 So. Clinton St.,
Newburgh, N. Y. Chicago 6, Ill.

Ammann & Whitney

Consulting Engineers

Design — Supervision
Bridges, Buildings, Industrial Plants, Special Structures, Foundations, Airport Facilities, Expressways.
76 Ninth Avenue, New York 11, N. Y.
724 E Mason Street, Milwaukee 2, Wis.

PROFESSIONAL SERVICES

Cards arranged by states, cities, names — **Additional cards on preceding and following pages**

Barker & Wheeler

Water Supply — Utility and
Sewerage — Industrial
Sewage Disposal — Valuations
Power Systems — Reports

New York City, 11 Park Place
Albany, N. Y. 36 State St.

Clinton L. Bogert Associates

Consulting Engineers

Water and Sewage Works
Refuse Disposal — Industrial Wastes
Drainage — Flood Control
624 Madison Ave., New York 22, N. Y.

Bowe, Albertson & Associates

Engineers

Water and Sewage Works—Industrial Wastes—Refuse Disposal—Municipal Projects—Airfields—Industrial Buildings—Reports—Designs—Estimates—Valuations—Laboratory Service.
116 William St., New York 7, N. Y.

Buck, Seifert & Jost

Consulting Engineers

(Formerly Nicholas S. Hill Associates)

Water Supply — Sewage — Hydraulic Developments, Reports and Valuations, Chemical and Biological Laboratories.
New York City, 112 E. 19th St.

Brown & Blauvelt

CONSULTING ENGINEERS

Limited Access Highways, Parkways and Expressways
Airports, Dams, Bridges, Site Planning
Industrial Plants, Water Supply
Sewers, Sewage and Refuse Disposal
Preliminary Reports, Design and Supervision of Construction
Soils and Concrete Testing, Material Controls
Tax Maps, Surveying, Municipal Engineer Services
46 Cedar Street, New York 5, N. Y.
Heeren Bldg., 140 8th Street, Pitts. 22, Pa.
2700 Bridge Plaza South,
Long Island City 1, N. Y.

Ebasco Services Inc.

ENGINEERS
CONSTRUCTORS
BUSINESS CONSULTANTS

Design and Construction
Financial and Operating Consultation
Investigations and Reports
Consulting Engineering

Two Rector Street — New York
209 S. LaSalle Street — Chic. 4, Ill.
1004 K Street, N.W. — Wash. D. C.

Fay, Spofford & Thorndike

Engineers

Charles M. Spofford — Ralph W. Horne
John Ayer — William L. Hyland
Rion A. Bowman — Frank L. Lincoln
Carroll A. Farwell — Howard J. Williams

Bridges and Industrial Plants
Water Supply and Sewerage Works
Port and Terminal Works — Airports

Valuations, Investigations, Designs, Supervision of Construction.

11 Beacon St., Boston, Mass.
420 Lexington Ave., N. Y.
(Graybar Bldg.)

The Fraser-Brace Companies

Design Engineers and Constructors

Electro-smelting & Refining
Chemical & Process Industries
Industrial Plants—Pulp & Paper Mills
Dams & Hydro-electric Developments
Heavy Foundations—Port Facilities
10 E 40 St — 360 St James St W
New York 16 — Montreal, Can.

Freyssinet Company, Inc.

Prestressed concrete structures:

Industrial Buildings
Bridges
Waterfront & Harbor Structures
Storage Tanks
Underpinnings

Estimates, tests, reports, design and supervision

57 William Street, New York 5, N. Y.

Hardesty & Hanover

Consulting Engineers

Successors to Waddell & Hardesty

Bridges
Long Spans of All Types
Movable—Lift, Bascule and Swing
Hanover Skew Bascule
Steel and Concrete Spans
Grade Crossing Eliminations

Other Structures
Foundations
Supervision, Reports, Appraisals

101 Park Avenue, New York 17, N. Y.

Frederic R. Harris, Inc.

CONSULTING ENGINEERS

F. H. Dechant, E. J. Quirin,
E. H. Harlow

Harbors, Piers & Bulkheads, Drydocks, Foundations, Soil Mechanics.
Sanitary & Industrial Waste Disposal.
Water Supply, Flood Control.
Airports, Highways, Bridges.
Power, Industrial Plants, Buildings

27 William Street — New York
2 William Street — Newark
Fidelity Phila. Trust Bldg. — Philadelphia
Ferry Bldg. — San Francisco

Hazen and Sawyer

Engineers

Richard Hazen — Alfred W. Sawyer
Municipal and Industrial Water Supply
Purification and Distribution, Sewage Works and Waste Disposal
Investigations, Design, Supervision of Construction and Operation
110 East 42nd St., New York 17, N. Y.

Howard, Needles, Tammen & Bergendoff

Consulting Engineers

Bridges and Structures

New York, N. Y., 55 Liberty St.
Kansas City, Mo., 921 Walnut St.

Knappen-Tippetts-Abbett-McCarthy

Engineers

Ports, Harbors, Flood Control, Power, Dams, Bridges, Tunnels, Highways, Subways, Airports, Traffic, Foundations, Water Supply, Sewerage, Reports, Design, Supervision, Consultation.

62 West 47th Street, New York City

Modjeski and Masters

Consulting Engineers

Design, Supervision, Reports,
Inspection and Investigations, of
Bridges, Structures, and Foundations.
535 Fifth Ave. — State Street Bldg.
New York, N. Y. — Harrisburg, Penna.

Moran, Proctor Mueser & Rutledge

Consulting Engineers

Foundations for Buildings, Bridges and Dams; Tunnels, Bulkheads, Marine Structures; Soil Studies and Tests; Reports, design and supervision.

New York 17, N. Y. 420 Lexington Ave.

PARDO, PROCTOR, FREEMAN & MUESER
Ap. Corros 614 — Caracas, Venezuela

Parsons, Brinckerhoff Hall & Macdonald

ENGINEERS

Airports, Bridges, Tunnels, Highways, Traffic and Transportation Reports, Subways, Foundations, Harbor Works, Valuations, Power Developments, Industrial Buildings, Dams, Sewerage, Water Supply.

51 Broadway, New York 6, N. Y.

Malcolm Pirnie Engineers

Civil & Sanitary Engineers

Malcolm Pirnie — Ernest W. Whitlock
Robert D. Mitchell — Carl A. Arenander
Malcolm Pirnie, Jr.

Investigations, Reports, Plans
Supervision of Construction and Operations.

Appraisals and Rates

25 W. 43rd St., New York 36, N. Y.

The Pitometer Company

Engineers

Water Waste Surveys
Trunk Main Surveys
Water Distribution Studies
Water Measurements & Special Hydraulic Investigations

New York, 50 Church St.

Alexander Potter Associates

Consulting Engineers

Water Works, Sewerage, Industrial Waste, Hydraulic Works, Reports, Designs, Appraisals.

50 Church St., New York, N. Y.

Clyde Potts Assoc.

Weston Gavett-Stanley N. Williams
Consulting Sanitary Engineers

Sewerage and Sewage Disposal
Water Works and Water Supply
Valuations and Appraisals

30 Church Street, New York 7

Sanderson & Porter

Engineers and Constructors

New York • Chicago • San Francisco

Scheidenhelm, F. W.

Consulting Engineer

Hydraulic Engineering: Hydro-electric Development; Water Supply; Flood Control; Engineering Problems relating to Water Rights and Water Power Law; Appraisals. 50 Church Street, New York 7, N. Y.

Seelye Stevenson Value & Knecht

Consulting Engineers

MANUFACTURING PLANTS
Plans, Specifications, Field Supervision, Reports, Valuation.

HEAVY ENGINEERING
Airports, Paving, Bridges, Stadia, Dams, Water Supply, Sanitation, Tunnels, Piers, Harbors, Industrial Waste Disposal.

STRUCTURAL
Skeleton Buildings, Foundations, Soil Studies, Concrete Control, Underpinning.

MECHANICAL - ELECTRICAL
Steam and Electric Generating Plants, Heating, Air-conditioning, Refrigeration.
101 Park Ave. — New York 17, N. Y.

Severud-Elstad-Krueger

Consulting Engineers

Structural Design - Supervision
Reports - Buildings - Airports
Special Structures
415 Lexington Avenue
New York 17, N. Y.

Singstad & Baillie

Consulting Engineers

Ole Singstad — David G. Baillie, Jr.
Tunnels, Subways, Highways
Foundations, Parking Garages

24 State St. — New York 4, N. Y.

Frederick Snare Corporation

Engineers—Contractors

Harbor Works, Bridges, Power Plants, Dams, Docks and Terminals.
Difficult and Unusual Foundations A Specialty.

233 Broadway, New York City 7

Havana, Cuba — Lima, Peru
Bogota, Colombia, Caracas, Venezuela,
San Juan, Puerto Rico, Guayaquil, Ecuador.

D. B. Steinman

Consulting Engineer

BRIDGES
Design, Construction
Strengthening, Investigations, Reports, Advisory Service

117 Liberty St., New York 6, N. Y.

Taylor, Henry W.

Water Supply, Sewerage
Garbage Disposal, Incineration
Industrial Wastes Disposal
Hydraulic Developments

11 Park Place, New York City

The J. G. White Engineering Corporation

Design—Construction
Reports—Appraisals

80 Broad Street, New York 4

Schuerman & Frost

Engineers

Buildings and structures, heating and ventilating, water supply, sewerage, appraisals, design, supervision, surveying.

54 Market Street, Poughkeepsie, N. Y.

Keis & Holroyd

Consulting Engineers

Formerly Solomon & Keis
Since 1906
Water Supply, Sewage Disposal, Garbage & Refuse Incineration, Industrial Buildings.

Troy, N. Y. — Ft. Lauderdale, Fla.

The Austin Company

Design and Construction

Manufacturing and Process Plants
Airports & Air Transport Buildings
Railroad Terminals and Facilities
Power Plants—Industrial & Institutional
Industrial Office Buildings and Laboratories
Reports and Plant Location Surveys

New York CLEVELAND Los Angeles
Chicago — Houston — Oakland
Detroit — Seattle

Havens and Emerson

W. L. Havens — C. A. Emerson
A. A. Burger F. C. Tolles F. W. Jones
W. L. Leach H. H. Moseley J. W. Avery
CONSULTING ENGINEERS
Water, Sewerage, Garbage, Industrial Wastes, Valuations—Laboratories
Leader Bldg. — Woolworth Bldg.
Cleveland 14 — New York 7

Burgess & Niple

Civil and Sanitary Engineers
Consultants since 1908

Water supply, treatment and distribution. Sewage and industrial wastes disposal. Investigations, reports, appraisals, rates. Plant operation, laboratory, plans and specifications.
584 E. Broad St. — Columbus 15, Ohio

Jones, Henry & Schoonmaker

(formerly Jones & Henry)
Consulting Sanitary Engineers

Water Works, Sewerage & Treatment
Waste Disposal
Security Building — Toledo 4, Ohio

Toledo Testing Laboratory

Engineers—Chemists

Inspection — Tests
Research — Development
Concrete - Asphalt - Soils - Ceramics
Foundation Investigation
Borings — Diamond Drilling
Load Tests

1810 North 12th St. — Toledo 2, Ohio

PROFESSIONAL SERVICES

Cards arranged by states, cities, names — Additional cards on preceding pages

Glancy & Carle
Engineers
Steel & Concrete Structures
Industrial, Commercial Buildings
Design, Supervision, Reports
1506 Market Street, Youngstown, Ohio

Benham Engineering Co.
ENGINEERS
Webster L. Benham David B. Benham
M. Am. Soc. C. E.
Water Supply & Purification, Sewerage, Sewage Disposal, Electric Light & Power, Roads, Drainage
Am. National Bldg., Oklahoma City, Okla.

Loedding Engineering Co., Inc.
Consulting Engineers
Design and Detail
Industrial and Commercial Planning
Bridges, Material Handling
Structures of all Types
Reinforced Concrete and Foundations
500 Merchant St., Ambridge, Penna.

Capitol Engineering Corporation
Engineers—Constructors—Management
Bridges Dams
Planning Airports
Sewage Systems Water Works
Design and Surveys Roads & Streets
Executive Offices Dillsburg, Penna.

Gannett Fleming Corddry & Carpenter, Inc.
ENGINEERS
Water Works, Sewage, Industrial Wastes & Garbage Disposal — Roads, Airports, Bridges & Flood Control, City Planning, Traffic & Parking, Appraisals, Investigations & Reports.
Harrisburg, Pa.
Branch Offices
Scranton, Pa. Pittsburgh, Pa.
Medellin, Colombia, S. A.
Daytona Beach, Fla.
Havana, Cuba

Myers-Richardson Associates
Consulting Engineers
Power Plants, Industrial Buildings and Facilities, Municipal Plumbing, Water, Sewage and Industrial Waste Problems, Investigation and Reports, Construction Supervision.
11 E. Airy St. Norristown, Pa.

Aero Service Corporation
Photogrammetric Engineers
Aerial Topographic Maps
Precise Photo Mosaics
Plastic Relief Models
236 E. Courtland St.
Philadelphia 20, Pa.

Albright & Friel, Inc.
Consulting Engineers
Water, Sewage and Industrial Wastes Problems, Airfields, Refuse Incinerators, Dams, Power Plants, Flood Control, Industrial Buildings, City Planning, Reports, Appraisals and Rates. Laboratory.
121 So. Broad St., Philadelphia 7, Pa.

Day & Zimmerman, Inc.
Engineers
Designs, Construction, Valuations
Reports and Management
Public Utilities and Industrials
New York Philadelphia Chicago

Frederick H. Dechant
Consulting Engineer
Chairman of the Board
Frederic R. Harris Inc.
Water Works, Industrial Wastes, Sewerage, Recovery Processes, Hydraulic Works, Gas Plants
Philadelphia: Fidelity Phila. Trust Bldg. New York: 27 William St.

Fridy - Gauker - Truscott & Fridy
Architects & Engineers
Water Sewerage Industrial Waste
Incineration Power & Distribution
Airport Building Town Planning
1321 Arch Street Philadelphia 7, Pa.

G. G. Greulich
Consulting Engineer
Investigations, Reports, Advice, Pile Foundations, Sheet Piling, Cofferdams, Bulkheads, Piers, Bridge Decks, Bank Vaults.
1346 Connecticut NW 778 Osage Rd.
Washington 6, D. C. Pittsburgh, Pa.

Hunting, Larsen & Dunnells, *Engineers*
Industrial Plants—Warehouses, Office and Commercial Buildings. Steel and Reinforced Concrete. Design and Supervision. Reports.
1150 Century Bldg., Pittsburgh, Pa.

Peter F. Loftus Corporation
Engineering and Architectural Consultants
Established 1923
Power Plant and Industrial Design, Reports, and Consultation
Pittsburgh 22, Pennsylvania

Morris Knowles Inc.
Engineers
Water Supply and Purification Sewerage and Sewage Disposal, Valuations, Laboratory, City Planning.
Pittsburgh, Pa.

Gilbert Associates, Inc.
Engineers and Consultants
Design and Supervision of
Steam, Hydro, Water Supply
Sewage Disposal, Diesel Plants
and Airports, Valuations, Laboratory
Reading, Pa. 412 Washington St.
New York 61 Broadway
Houston Oil & Gas Building
Washington, D. C. 1417 K St., N. W.

Michael Baker, Jr., Inc.
The BAKER ENGINEERS, Civil Engineers, Planners, and Surveyors. Municipal Engineers, Airport Design, Highway Design, Sewage Disposal systems, Water Works Design and Operation, City Planners, All Surveys. Home Office: Rochester, Pa., Branch Offices: Jackson, Miss., Harrisburg, Pa.

Myers & Noyes & Associates
Consulting Engineers
Water Supply, Sewage, Flood Control, Shore Protection, Irrigation and Reclamation, Reports and Valuations
2204 Tower Petroleum Bldg., Dallas, Texas
720 Wilson Building
Corpus Christi, Texas

Lockwood & Andrews
Consulting Engineers
Airports, Paving, Industrial Plants, Drainage & Sewerage, Site Locations, Soils & Foundations, Water Supply, Structures, Harbor Works, Valuations, Reports — Design — Supervision
Union Nat'l Bank Bldg., Houston, Tex.

The Foundation Engineering Company of Puerto Rico
Consulting Engineers
Foundation and Soil Mechanics Investigations, Laboratory analyses, reports and recommendations, design of structures, Supervision.
P. O. Box 821, San Juan, Puerto Rico

Hutchings & Milani, Ltd.
Engineers & Constructors
Industrial - Roads - Power Plants - Dams - Tunnels - Harbor Works - Foundations - Hotels
CARIBBEAN - WEST INDIES - SOUTH AMERICA
BERMUDA-CARIBBEAN CONSULTANTS, LTD.
Architects & Engineers.
Design - Reports - Investigations
L. C. Milani, ASCE; C. W. Abbott, R.I.B.A.; N. J. Seaney, A.I.A.; P. Coller; T. F. Carr, H. J. Williams; S. H. Pace; W. Weir.
BOTH HEAD OFFICES AT HAMILTON, BERMUDA.

Atlantic, Gulf and Pacific Company of Manila
Engineers
Design - Construction
Inquiries invited for work in the Philippines and Far East.
P. O. Box 626, Manila, Philippines
Cable Address: DREDGING Manila

Inspecting and Testing

Robert W. Hunt Company
Inspection and Tests of Engineering Materials and Equipment.
General Offices and Laboratories
175 West Jackson Blvd., Chicago 4
All Principal Cities

Johnson Soils Engineering Laboratory
Engineering design and construction tests run from MOBILE LABORATORY UNITS at construction site. Field load bearing tests.
193 West Shore Ave., Bogota, N. J.
Bogota-Hubbard 7-4408

REMEMBER!!
You can depend on these consultants for a fast, accurate solution to your problems. Consult them when necessary.

OFFICIAL PROPOSALS

Bids: June 24, 1952

Routes 47 and 49

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Routes 47 and 49, Underground Structures for Traffic Signal Systems, Cities of Brigeton and Millville, Cumberland County. The principal items for installation are:

Estimated:
2,120 Lin. Ft. Conduit Installations
11 Units Service Installations
33 Units Concrete Foundations
5 Units Detector Installations
2 Units Junction Boxes
1 Unit Push Button Installation

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 24, 1952, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

OFFICIAL PROPOSALS

Because of the character of the work to be performed under this contract, bids will be accepted only from contractors prequalified in the classifications of grading, paving, or general contracting.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

(Additional Proposals on page 113-116)

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

CIVIL ENGINEER graduate, under 40, paving experience desirable, for technical, promotional, educational work in Pennsylvania. Permanent. Please give summary of education, experience, salary requirements in reply. P-4501 Engineering News-Record.

CONSTRUCTION SUPERINTENDENT. Industrial work, North Central, New Jersey—State age and experience—Salary open. P-4500 Engineering News-Record.

DIRECTOR, SCHOOL Construction. The Montgomery County, Maryland, Board of Education requires services of experienced engineer to direct and supervise school building program. Must have Civil Engineer degree and considerable experience in administrative and supervisory work concerned with engineering planning and construction relative to large-scale building projects. Salary $7,000-$9,000 depending upon education and experience. Permanent position, non-political, opportunity for advancement, paid annual and sick leave. Write Board of Education of Montgomery County, Rockville, Maryland for details.

(Continued on the opposite page)

WANTED
FOR FOREIGN ASSIGNMENT
IN SAUDI ARABIA
2 YEAR CONTRACT
PREVIOUS FOREIGN EXPERIENCE PREFERRED

Public Works Program
Project Administrative Personnel
Superintendents
Assistant Superintendents
Chief Engineer, Civil

CIVIL ENGINEERING PERSONNEL
Cost Estimators
Municipal Planners
Water and Sewer Designers
Structural Designers
Draftsmen

ELECTRICAL ENGINEERS
Diesel Power Municipal Systems

Write Complete Qualifications to

ROY S. BRADEN
Personnel Director

MICHAEL BAKER, JR. INC.
Consulting Engineers & Constructors
Baker Building Rochester, Pa.

ENGINEER-SUPERINTENDENT — Medium sized sewer, water, pump station, and disposal plant contractor in Northern New Jersey has an opening for an experienced construction man thoroughly familiar with all phases of construction work. Must be able to estimate (quantity take-off through completion of formal bid), to organize and run a job from start to completion, and to supervise routine office work. This is an unusual opportunity for the right man both as to starting salary and future opportunity.
P-4257, News-Record, 330 W 42 St., N. Y. 36, N. Y.

Bridge Designers & Draftsmen

Good pay for qualified men. Opportunities for advancement. Also specification writers and squad leaders. Pleasant working conditions. Interesting projects. Apply in person, or write fully stating education and experience.

D. B. STEINMAN, Consulting Engineer, 117 Liberty St., New York 6, N. Y.

POSITIONS VACANT
(Continued from the opposite page)

ENGINEER—ESTIMATOR. Experienced for Westchester County (N.Y.) contractor doing highways, sewers, paving, excavation & other public works. Present staff knows of this advertisement. Please submit qualifications, experience, salary etc. for appointment. P-4518, Engineering News-Record.

ENGINEER, EXPERIENCED in design and/or construction of water works, sewerage systems, water treatment, sewage treatment plants, surveying. State age, experience, salary requirements, references and when can report. P-4394, Engineering News-Record.

GENERAL SUPERINTENDENT — Marine and Heavy Construction. Permanent position. Location Southern New England. P-3974, Engineering News-Record.

HIGHEST GRADE fully qualified construction engineer or superintendent adequately experienced in paper mill construction to supervise construction large paper mill this country. Similar man desired for foreign paper mill. P-4509, Engineering News-Record.

HOME OFFICE Manager Wanted, familiar with Railroad Track work, Water Lines, Drainage, Grading, General Accounting, and Buying. Location—Detroit, Michigan. P-4499, Engineering News-Record.

SEVERAL ENGINEERS in office of consultant on sanitary projects, experienced in this or related fields such as structural or hydraulic. Permanent positions intended. Full information, references and salary requirement requested. Location, Ohio. P-4497, Engineering News-Record.

STRUCTURAL STEEL Detail Draftsman and Checkers. All types of Structures. Vacation, group insurance, good working conditions. Only top quality men. Send complete written information. Bristol Steel & Iron Works, Inc., Bristol, Virginia-Tennessee.

ROAD SUPERINTENDENTS, foremen and highway bridge superintendents. Write complete background with references and salary expected. Location upstate New York. P-4489, Engineering News-Record.

WANTED

HIGHWAY ENGINEERS AND ENGINEER ASSISTANTS

COLLEGE GRADUATES OR EXPERIENCED TRAINED

PERMANENT POSITION WITH SICK LEAVE,

VACATION AND RETIREMENT BENEFITS

GOOD SALARIES AND YEARLY INCREASES

Apply

MAINE STATE HIGHWAY COMMISSION
STATE HOUSE, AUGUSTA, MAINE

POSITIONS VACANT

WANTED—GRADUATE Civil Engineer by general building contractor for quantity takeoff, estimating and technical office work. Experience not necessary but must be accurate, thorough, mathematically inclined and legible writer. Location Western Pennsylvania. Give resume of education, experience and age. P-4325 Engineering News-Record.

WANTED—MALE—Structural Steel Detailer—Experienced—1st Class—Permanent position—Excellent Opportunity for Right Party. The New England Iron Works, Inc., P.O. Box 955, New Haven, Connecticut.

YOUNG MAN interested in trade association work to assist managing director. Must have experience in mimeograph, postage meter, stencil cutting and general office work. Location Albany, N. Y. Write giving background and salary expected. P-4490, Engineering News-Record.

EMPLOYMENT SERVICE

SALARIED PERSONNEL, $3,000-$25,000. This confidential service, established 1920, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

POSITIONS WANTED

ASST PURCHASING Agent famous construction Co. in NYC desires new connection. NYC or suburban Jersey. Graduate M.E. seven years construction purchasing experience. 38, Veteran. PW-4492, Engineering News-Record.

BUILDING CONSTRUCTION Executive thoroughly experienced estimating, buying subcontracts, materials, etc., solicitation of new business and field management. PW-4393, Engineering News-Record.

CIVIL ENGINEER, experienced administration, costs, planning, organization; 43, graduate, registered, M.A.S.C.E.; available early fall for executive position with consultant, contractor, or on corporation engineering staff. PW-4451, Engineering News-Record.

CIVIL ENGINEER, experienced building construction, desires position Eastern area or Northwest coast. PW-4469, Engineering News-Record.

CIVIL SANITARY Engineer: M.A.S.C.E.; C.E.; M.C.E.; M.S. in P.H.E. Registered in three states. Twenty-five years construction, engineering, engineering teaching and administrative experience. PW-4464, Engineering News-Record.

(Continued on the following page)

Permanent Positions Open to
ENGINEERS
. . . after training at
full-time pay . . . as
Consultants in
Fire Protection Engineering
to top U. S. and Canadian industry. Usual pension and other benefits. Excellent opportunities; fast-growing engineering organization.

Write complete qualifications to:
P-2807, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED
- **CARPENTER BRIDGE FOREMAN**
- **GENERAL CONSTRUCTION FOREMAN**

EASTERN NEW YORK STATE
WRITE COMPLETE QUALIFICATIONS TO
P-4478, Engineering News-Record
330 W. 42nd St., New York 36, New York

BUILDING SPECIALTY SALESMEN

For L. I., Westchester, Conn. & lower N. Y. State. Architectural or Construction background. Some experience necessary in Sales of Building Products to Builders, housing developers & Contractors. Excellent oppty for several aggressive young men for future with large reliable Metal Window & Building Material Mfr. & Distributor. Exclusive territory. Substantial Drawing vs. Comm. Must have car. *Write fully stating education, experience, references & earnings.*

RUSCO PRIME WINDOW CORP.
(Division of the Weisberg-Baer Co.
4-05 26 Ave. L. I. City 2, N. Y.

SEARCHLIGHT SECTION

CONSTRUCTION MANAGER

Capable of taking complete charge of estimating, bidding, organizing, and supervising Heavy Construction Projects—Sewage and Water Treatment Plants—Power Plants—Port Facilities, etc. Desires permanent connection with long established contractor on salary plus incentive bonus arrangement. Best of References.

PW-4656, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

(Continued from the opposite page)

CONSTRUCTION SUPERINTENDENT and Engineer, 18 years practical experience covering all types of buildings and heavy construction, good organizer, knows costs, sober and reliable, must be permanent, prefers midwest, southwest or west location, available immediately. PW-4411, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT or project manager available now. 35 years comprehensive experience and accomplishment principally in industrial structures and power plants, all phases of engineering and construction. Will accept assignment anywhere for large project. Write or phone Arthur Douglas Dean, 8 Diana Trail, Staten Island 4, New York.

DESIGNER, REINFORCED concrete, structural steel pressure vessels, & sales engineering, expediting. Twenty year's experience. Now employed. Desires sales work, expediting, field or traveling. PW-4517, Engineering News-Record.

EXECUTIVE CONSTRUCTION Engineer, long experience, estimates and supervision heavy construction including foundations, dams, docks, tunnels, especially difficult subaqueous structures. PW-3497, Engineering News-Record.

EXECUTIVE ENGINEER—Twenty years experience, Petroleum and Chemical industries. Project management, engineering, construction, consulting and sales. Registered Prof. Eng. PW-4456, Engineering News-Record.

EXECUTIVE SUPERINTENDENT—Engineer, formerly journeyman in several Trades. Reg. Prof. Eng'r., very cost conscious, productive-driver, willing and able to take complete charge of substantial project on Hospitals, Housing, Industrial building, Bridges and Heavy construction. Review plans, prepare installation details for mechanical and other trades, select proper tools and equipment, distribute personnel, maintain labor and client relations. Will travel. PW-4462, Engineering News-Record.

GENERAL SUPERINTENDENT 52, with a thorough experience in that capacity, on public, commercial and industrial work including school, hospitals, housing, power plants and governments projects. Concrete and masonry specialist, with ability to minimize overhead and construction costs. References. PW-4343, Engineering News-Record.

MAINTENANCE AND Schedule Engineer—6 years experience in petroleum refinery; 2 years Sanitary Engineering design. Available after July 1. PW-4526, Engineering News-Record.

OFFICE MANAGER Account, Auditor 18 yrs. diversified experience in heavy industrial, refinery and housing construction. All phases of financial and cost accounting, payroll, timekeeping. PW-4465, Engineering News-Record.

STRUCTURAL STEEL Detail Draftsman, 4½ years experience all types of buildings, desires position in Middle East with advancement. PW-4519, Engineering News-Record.

PART TIME WORK WANTED

CIVIL ENGINEER, licensed NY desires work at home. Steel & concrete design, PTWW-4514, Engineering News-Record.

BUSINESS OPPORTUNITIES

Associate Wanted.
Structural Engineer, MIT graduate in Civil Engineering. Registered as Professional Engineer in New York State and Connecticut, with office and small staff in New York City, 20 years experience domestic and abroad in steel construction, reinforced concrete and power plant design, seeks associate on partnership basis with contacts to increase business volume. BO-4468, Engineering News-Record.

Professional Engineer,
Age Thirty Five, Business and Construction background. Seeks active and financial participation in Construction Company. BO-4295, Engineering News-Record.

Wanted Experienced Civil engineer
as partner. Good opportunity. BO-4523, Engineering News-Record.

FOR SALE

Swimming pool forms
in good condition, size 25 x 60 feet, $400. Write F. E. Mars, The Plaines, Virginia, or call Marshall, Virginia, 4541 or 4543.

STRUCTURAL ENGINEERING

ARCHITECTURAL ENGINEERING

OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. *Forty-first year. Write today.*

WILSON *Engineering Corp.*

College House Offices - HARVARD SQUARE, CAMBRIDGE, MASS.

CONSTRUCTION MANAGEMENT

Superintendents and Project Managers Training Course

All instruction by mail. Send today for sample lesson and complete details

GEO. E. DEATHERAGE & SON
5 E. Preston St. Baltimore 2, Maryland

AUCTION SALE
CONSTRUCTION EQUIPMENT

Monday, June 16, at 10 A. M.
at 559 East Brighton Ave.,
Syracuse, N. Y.

Mich. TMDT-16 (1952) Truck-crane; Northwest-25 (1949) w/trench-hoe (24" cats); TD-14 Int. Wide Gage 1947 Isac. Angl; Sterling 1949 Gas Tractor w/rear drum winch; Martin 1951 (27 ton) Lowbed 18' w/folding gooseneck; T-6 Int. Tractor wide gauge 1948 w/Hough 1 yd. Front Loader; Jaeger 210 Diesel Comp. UD-14 (1947) motor mounted on 1947 Reo w/1950 rapid paving breaker attach; Schramm 105 Portable Comp. 1948; Transit Pipe elec. cutting saw on trailer; White 1942 Tandem-drive truck w/2 ton pipe-handling crane; Ward-LaFrance 1950 Tractor 2-speed rear axle w/12 yd. Winchlift Trailer; Chevrolet 1948 2-Ton flatrack w/hoist (2-sp. axl.); Studebaker 1951 Pick-up; Ransom 7-S Mixer on rubber; and many other pieces of equipment. Misc. shop tools incl. jackhammers, welders, hi-pressure water-main tapping machines, air tools, misc. pumps, breakers, tampers, etc.

E. A. BARBEAU—AUCTIONEER

AN AUCTION
CONSTRUCTION EQUIPMENT

Mon. June 23 at 11 A.M., Farson, Wyoming, (250 Miles SW of Casper) 9-D8 Tractors, IH-8R & 6 2U's, 5 dozers; 2 TD18's dozers; 4 DW-10's & Scrapers; 4 Euclid 5Fd End dump trucks; Euclid 12 yd bottom dump—GMC Motor; Euclid loader 5BU, Cat motor, good belt; 4 Garwood scrapers, 15 & 25 yd; 2 Terra Cobras w/Woolridge scrapers 15 yd & Dixon 18-2-yd bottom dumps; Northwest #25 shovel-drag; Cat #12 & AC #AD patrols, scarifiers & cabs; '50 IHC West Coast Tractor Cummins 600 Diesel, winch; Talbert 1 yr old 30,000 lb lowboy; 4 sheepsfoot; wobbily wheel; trucks and many other pieces large & small. Write-wire auctioneers for full sale bill. Equipment is clear and all in excellent shape thruout. Positively-Sells-To-Highest-Bidders!

FORGEY CONSTRUCTION CO.,
Owner

FORKE BROTHERS,
THE AUCTIONEERS,
LINCOLN, NEBR.

321 Sharp Bldg. Phone 2-7045

BUILDING CONSTRUCTION COST DATA
1952 (10th) Edition

A 105-page booklet of tabulated construction costs revised as of January 1952. 1600 average spot prices, alphabetically arranged and broken down for labor and material, plus 112 explanatory paragraphs. Concise, Comprehensive, Up-to-date. Handy $2.75 Postpaid.

R. S. MEANS P. O. Box 36N Duxbury, Mass.

SURVEYING INSTRUMENTS

GURLEY

FACTORY REBUILDING
of all Modern Surveying Instruments

Gurley maintains a full department for repairing *all* modern makes of surveying instruments. Every repaired instrument goes through the same critical adjustment as a new Gurley.

We guarantee accuracy

W. & L. E. GURLEY
Union Plaza Troy, New York

FOR SALE
STEEL BUILDING

One 3 Bay unit with OET Cranes

1 Bay 80'0" x 200'0" 25 ton crane 26' lift
1 Bay 40'0" x 300'0" 10 ton crane 16' lift
1 Bay 40'0" x 300'0" No crane AC 3/60/440

One 60' x 200' ten ton crane 26' lift with 60' outside crane runway.

ORNITZ EQUIPMENT CORPORATION
Industrial Engineering Service
220-3rd Ave. Brooklyn 17, N. Y.
TRIANGLE 5-2553

EXPERT REPAIRS *All Makes*

USED INSTRUMENTS *Bought and Sold*

J. H. WEIL & CO.
1325 CHERRY ST. PHILADELPHIA, PA
GURLEY DISTRIBUTORS

RENT OR FOR SALE

1—1¾ yd. cat. diesel shovel;
2—TD ⅛ Bulldozers
2—D8 Bulldozeres
1—TD 9 loader & dozer
1—T. 9 Tractor crane
2—10 Wheel Dump trucks

FR 4522 Engineering News Record
330 W. 42 St., New York 36, N. Y.

WANTED:

Single Drum, Gas or Diesel Hoist, 10,000 to 12,000 lb. Line Pull and Drum Speed of 500 Ft. Per Minute.

A. S. WIKSTROM, INC.
SKANEATELES, N. Y.

LIQUIDATION SALE

AT 270 23RD STREET, BROOKLYN, NEW YORK SOUTH 8-4902

DIESEL ENGINES

	HP	MAKE	MODEL	RPM	CYCLE
3—	1600	General Motors	16-258S (marine)	900	4
2—	500	GMC Winton	204-8 (marine)	1000	4
1—	285	Chicago Pneumatic	RH-75-D	300	4
2—	200	GMC Winton	6-138 (marine)	700	4
8—	150	Superior	SMRA-4 (marine)	2400	4
2—	150	GMC Winton	6-179 (marine)	800	4
5—	69	Hercules	DJXC	2600	4

Also: Fairbanks-Morse, AEC and Junkers

AC MOTORS—3 PHASE, 60 CYCLE

	HP	V	RPM	MAKE
1—	150	440	690	Westinghouse (slip ring)
1—6000 HP at 93⅓ Cycle 400 RPM or 3800 HP at 60 Cycle 257 RPM.				GE
1—	75	220/440	690	Westinghouse (slip ring)
1—	75	440	565	General Electric (slip ring)
1—	60	220	870	Westinghouse (slip ring)
1—	40	220	1200	General Electric
15—	2¾	440	3500	Electro Dynamic
65—	½	220	1725 (2 phase)	Western Electric

32—GMC 6-71 Twin Diesels

D.C. DIESEL GENERATOR SETS

1—	60 KW	Superior model	GA-8
2—	80 KW	Cummings	HGD
1—	60 KW	Buda	6DCG
1—	60 KW	Cummings	HGD
2—	20	Hill	4R
1—	20	Hill	4R
2—	15	Hercules	DOOD
1—	11	Petters	
6—	10	Hill	2-R
1—	4	Junkers	1HK65

A.C. DIESEL GENERATORS SETS

1—	210 KVA	Chicago Pneumatic	4-H-40-S
1—	75 KW	Cooper-Bessemer	GAWD
1—	40 KW	Buda-Lanova	6LD
1—	37½	Fairbanks-Morse	V
1—	31.3	Chrysler	IND-3
1—	32.5	Fairbanks-Morse	32

MOTORS—DC

1500 HP—525V-600 RPM. Westinghouse
222 HP—230V-3050 RPM. Westinghouse

GENERATORS—DC AND AC

From 1 to 1500 KW

MOTOR-GENERATOR SETS, DC, 230 V to 3/60/120

3—25 KVA, Continental
3—25 KVA, Burke Electric Company

GASOLINE ENGINE-GENERATOR SETS

1—34 KW Buffalo Gasoline engine, type R, 900 RPM, with Western Electric 5-G-101 generator, 230 volts.
Also large number from ¾ KW to 5 KW.

GASOLINE ENGINES

2—Sterling "Admiral" (marine), 800 HP @ 2200 RPM
8—Hall Scott "Defender" (marine), 680 HP @ 2100 RPM
8—Wright-Hispano Suiza, 360 HP @ 1750 RPM
6—Waukesha, 42 HP @ 2200 RPM
Also large number from 1 HP to 25 HP

NEW STEAM TURBINES

20—General Electric, 1000 HP, 525± temp. 825° F, with Falk reduction gear, pinion RPM 5405, gear RPM 3060, complete with throttle valves and other parts.
10—56.5 HP, 300-475 lbs. Steam—10-15 lbs. Exh. Pressure. 1225-1600 RPM. Sturtevant.

NEW DIESEL ENGINES PARTS

98—Fuel oil filter assemblies for General Motors 6-71 twins
9—Kits, spare parts for Buda 6-DTG-468 diesel large stock
Alco Model 540
Alco-Lube Oil Cooler, size 1054
GM-Harrison Rad. Div. Model No. H.E. 2120-327

AIR COMPRESSORS—DIESEL DRIVEN GASOLINE DRIVEN, ELECTRIC DRIVEN

From 64 CFM to 500 CFM, Ingersoll Rand, Schramm, Gardner-Denver, Sullivan, Chicago Pneumatic, etc.

CENTRIFUGAL PUMPS

From 1000 GPM to 6000 GPM, 100/300 feet.
Also motor driven pumps

LUBRICATING PUMPS

2—Burke Electric Company, horizontal, 55 HP, 115 V. DC.

BLOWERS

12—Ilg Company centrifugal electric-driven ventilating blowers, from 5,460 CFM to 23,250 CFM capacity, with 3/60/440 motors
3—Buffalo Forge Company hull ventilating blowers, 8000 CFM with GE motor, 6 HP @ 1735 RPM

AXIAL FLOW FANS—NEW

16000 CFM—3" S.P. 3/60/440, Sturtevant
8000 CFM—3" S.P. 3/60/440, Buffalo
6000 CFM—3" S.P. 3/60/440, American
35000 CFM—1" S.P. 230V. D.C. Wing

MARINE REDUCTION GEARS

9—Twin disc assembly, duplex, manufactured by Link Belt Engr. Co., 950 HP @ 2400 RPM, input shafts, output speed 596.4 RPM.

FREQUENCY CHANGER

1—20 KW frequency changer, General Electric KT-512Y motor, 25 HP, 3/60/220, output motor 3/180/220.

WELDING MACHINES

8—300 amp. gasoline driven
1—1000 amps, diesel driven
Motor driven welders, transformer type. Spot-welder

HICYCLE TOOLS—3/180/220

(Motor generator set available)
700—drills, nut runners, screwdrivers, impact wrenches

ICE PLANTS

7—One-ton portable York ice plants, model Y-50, with Continental 4-cylinder gasoline engine
1—Fifteen-ton York ammonia compressor
2—22 Ton Capacity. Freon 12. Mfd. by Frick
REFRIGERATION UNITS

HOISTS AND WINCHES

1—Lambert double drum steam hoist, 10"x12" cylinders
1—Clyde double drum gasoline-driven scraper hoist
LST stowing winch with 15 HP motor.
1—Page double drum hoist, diesel-driven, 16"x17", with Page 150 HP, 350 RPM engine
10—15000 lb. pull at 78 FPM, 3360 lb. pull at 348 FPM and 2 Auxiliary Drums driven by Chrysler 28.35 HP gasoline engines (New).
ELECTRIC HOISTS

CRANES

1—Tournacrane, model TC-30, 30 ft. boom and jib.
1—Tournapull, model Super C, with Caterpiller D468 diesel engine, 98 HP, 8 cylinder
1—Cranemaster, tractor type, 5 tons, 18 ft. non-revolving boom.
13—5-ton gasoline stevedore cranes, with 18' non-revolving booms.
3—Shepard-Niles 6 ton overhead cranes, 2-motor, 28" 8¼" span, equipped as ice cranes with 4 hooks.
1—Bucyrus-Erie model B2 pile-driving crane, with boom, steam operated.
1—Bucyrus-Erie model B2 pile-driving crane, steam operated.
1—Vulcan Number 2 pile driving hammer.
1—Union Number 6 pile driving hammer.
Also Truck Cranes

TRACTORS

1—Caterpiller model D-50 diesel power tractor, crawler mounted, with LaPlante-Choate straight blade bulldozer.

WAGON DRILLS

2—Cleveland model D14 wagon drills
1—Ingersoll-Rand wagon drill,type AIN-75

CONCRETE MIXERS

1—Jaeger 14-S, portable
1—Koehring 21-S
1—Rex 10-S
2—Ransome 7-S

20,000 LIGHT BULBS
1000 Watts 220-250 Volts

2—Concrete Brickmaking Machines, Brickmaster Model 10

Air Coolers
Condensers, from 155 to 8000 sq. ft.
Air ejectors
Blowers — air pumps
Push button starters, 7½ HP
Vapor compressors
High pressure air compressors
Centrifuges
Evaporators
Soot blowers
Pumps — motor & turbine driven
Oxygen producing plant
Welding electrodes
Reduction gears
Motors — AC & DC
Generators
Machine Tools
Diesel parts
Radiator core soldering furnace
Vertical Plate Bending roll, capacity 1¼"x14"
Niles heavy duty plate shear—16" knife, 36" gap
Niles Bement plate planer, 20", 2 cutting heads
Milling machines
Forging hammers
Underwater velocity tools
Gasoline locomotives
Road Rollers — 6 ton
Heat exchangers
DC Turbo-generators
Transformers
Light plant
Fork & Platform lift trucks
Degreasing machines
Flexible shaft grinders
Riveters
Sanding Discs
Hydraulic Jacks
Viscolizer pump
Pulverizers
Dessicite
2" Marine rubber bearings
6" Suction and refueling hose
Feed rails, 1000 amps, 3 conductor
Wire rope
Wire rope slings

EASTERN SCRAP & SALVAGE CORPORATION

65 MUIRHEID AVENUE, TRENTON 7, NEW JERSEY TELEPHONE 5-6349

EXCEPTIONAL SALE OF USED EQUIPMENT

ALL IN EXCELLENT CONDITION PRICED FOR IMMEDIATE SALE

•

SHOVELS

1—1937 Marion Combination Diesel Shovel w/rebuilt Waukesha Model 6ELH Diesel engine, electric starting, 2 c.y. bucket. Completely rebuilt and not used since rebuilding.

1—1937 Marion Combination Diesel Shovel w/new Waukesha Model WAKDU Diesel engine w/gasoline starting engine, 2 c.y. bucket. Completely rebuilt and not used since rebuilding. 60' Dragline boom.

1—1944 Lorain Shovel & Dragline Model 820, w/D13,000 Caterpillar engine, 2½ c.y. bucket. Excellent rebuilt condition.

COMPRESSORS

1—Ingersoll-Rand Compressor, Model HK-500, w/6WAKA 58C engine.

1—315 Schramm Compressor Model UD18.

1—210 Schramm Compressor.

PUMPS

1—4" Rex Pump—40M.

1—6" Rex Pump—90M, mounted on 2 steel wheels.

1—3" Rex Pump—20M.

TRUCKS

1—1948 GMC Diesel Truck, 3 ton, Model ADCW974 flat bed w/winch, 228 wheelbase, tandem rear axle.

2—1948 Sterling Trucks, Model 115DD, 4 wheel drive, engine Model 6RKR gasoline, 16 ton, flat beds.

6—Sterling Trucks, Model 147HC, w/Waukesha engines Model 6RKR gasoline, 9 c.y. struck level bodies without sideboards. Several rear ends. Three used Sterling motors. Three factory rebuilt.

MISCELLANEOUS

1—4" Gorman-Rupp Model 1405 mounted on Trailer.

1—Ingersoll-Rand 25 lb. Jackhammer—1" steel.

3—Ingersoll-Rand 55 lb. Jackhammers.

1—Ingersoll-Rand JB4 Jackhammer, ⅞" steel.

1—Fairbanks-Morse Diesel, 2 cycle, HE10 Slow Speed, about 250 H.P., 6 cylinder.

1—LeTourneau Tournadozer Model C, w/180 H.P. Buda Diesel Engine mounted on four pneumatic tires.

1—Rome Grader Model 404, w/Hercules engine.

3—Hardsogg Coal Drills.

All Equipment Subject to Prior Sale.

TO GET INFORMATION QUICKLY WIRE . . . WRITE . . . CALL . . .

FURNIVAL MACHINERY CO.

54th at Lancaster Ave., Phila., Pa. • TR 7-5200
5101 Paxton, Harrisburg, Pa. • 8-1781

SPECIAL SALE

Choice of 6 Caterpillar D-8 Angledozers with Dual Drum Cable Power Units 8-R Series—$7,500.00 each

2—Caterpillar D-8 Angledozers 2-U Series—$11,000.00 each

Lima Paymaster Shovel, Serial No. 1002—Real Buy at only $11,000.00

These machines are in excellent condition and worth much more.

All prices are F.O.B. Pittsburgh, Penna.

These machines are offered subject to prior disposition

SANCTIS CONSTRUCTION, INC.
410 Marlow Street **Pittsburgh 20, Penna.**
WAlnut 1-9000

GOVERNMENT SURPLUS

2 yd DIESEL CRANE

Very Little Service

$19450

at location—El Paso Area

P & H MODEL 750 L. C.
WITH FAIRBANKS MORSE DIESEL ENGINE

68 FT. ALUMINUM BOOM
2 YD. BUCKET - LIGHT GENERATOR
WIDE TRACKS - AIR COMPRESSOR

100'S OF OTHER PIECES

Write for Complete Free List

REX TRAILER CO., INC.
DEPT. EN
P. O. BOX 5235 RI. 5648
DALLAS, TEXAS

FOR SALE

Used Ransome 34E

DUAL DRUM PAVER

powered by a Cummins Diesel Engine. Over $3500.00 worth of parts have been installed on this paver besides cleaning and painting to put it in first class shape for immediate use on your job.

Offered, subject to prior sale at $15,000.00 F.O.B. Detroit.

W. H. ANDERSON CO., INC.
47 West Seven Mile Road
Detroit 3, Michigan Phone: Forest 6-1000

3—Cat DW20 & Wagon (1951)
3—Cat DW10 & Wagon (1949)
5—Euclids 38FDT & 89W Wagons
5—TD24 A-Dozers (1950)
3—LaPlante T300 Scrapers (1951)
Lorain 820 Drag. (1948) $29500

BLOCK MACHINES

2—Besser Vibrapacs (1948) V3M

WALTER S. RAE
243 Academy Ave. Pgh. 28, Pa.
Phone—Lehigh 1-4699

FOR SALE OR RENT AIR COMPRESSORS

2—WORTHINGTON	315 Cu.Ft.
1—SCHRAMM	315 Cu.Ft.
1—GARDNER-DENVER	315 Cu.Ft.
2—GARDNER-DENVER	210 Cu.Ft.
1—LE ROI	105 Cu.Ft.

All Machines Mounted On Pneumatic Tires & In Good Condition.

CASEY & EMMERT, INC.
1424 W. Ohio St. Chicago, Ill.
Tele: HA 1-6464

FOR SALE

Model 180 Single Pumpcrete
1000' of pipe and fittings
For Quick Sale—$5500.00

ABERTHAW COMPANY
133 Southampton St. Boston 18, Mass.
Phone Highlands 5-6700

FOR SALE—REPOSSESSION

1951 PRAIRIE SCHOONER 27' OFFICE TRAILER

SOLD FOR $3,000 NEW LAST YEAR.
WILL SELL FOR $1850.00

RAUCH INVESTMENT CO.
351 Pleasant St. Northampton, Mass.
Tel. 2037

FOR SALE
Madsen 4000 lb. Asphalt Plant

with 72" x 30' drier equipped with Hopkins Volcanic low pressure burner, dust collector, and power by Caterpillar Diesels. Two 10,000 gallon insulated hot oil tanks. Littleford 125 H.P. quick steam generator (new August, 1950). This plant was new in July, 1949, and has produced only 50,000 Tons of material. Located in Pennsylvania. This plant is in excellent condition, ready for work, and priced within OPS Ceiling.

S.J. GROVES AND SONS COMPANY
19 Rector St., New York, N. Y.
WHitehall 3-1055

FOR SALE
5 LaPlant Choate Motor Scrapers TS-300

Priced Right
Practically New

UNITED TRACTOR & EQUIPMENT CORP.
135 East 146 St., N. Y. 51, N. Y.
Cypress 2-0800 *A.E.D. Member*

FOR SALE

TRACTORS & ATTACHMENTS

Factory-new D-6, D-7 and D-8 w/Dozers;
D-7 in 4T Series w/Dozer $3200.00;
Lima Paymaster Shovel 1948 like-new $12,500;
P&H Truck Crane 20-ton $14,000;
655 P&H Shovel attach., like new, $2750;
3500 Manitowoc Std. shovel attach. $3900;
N.W. 25 hoe attach.;
Byers 83 Hoe attach.;
N.W. 6 hoe attach. & shovel attach.;
15-B shovel attach. & 22-B hoe attach.;
Marion 362 shovel attach.;
LS40 new Shovel attach.;
Osgood 200 shovel attach.;
Buckets all sizes

A. C. R. Co.
19615 Nottingham Rd.
Cleveland 10, Ohio

FOR SALE

2—1 yd. Northwest Crawler Cranes—Model 105
40 ft. Boom—Completely Rebuilt
1—Rex 27E Paver—10% overload
2—14S Concrete Mixers
2—Parson's 30 & 40 Trench Machines
1—Reo 2½ Ton 6 x 6 Truck—Excellent Condition
1—50 Ton Trailer—Hard Rubber Tires

GEO. G. ANDERSON & CO., INC.
14900 Myrtle Ave., Harvey, Ill.
Phone Harvey 222

DO YOU KNOW THAT DERRICK

was named for a famous Tyburn hangman of the 17th Century?

Do You Know That ECA Can Fill Your Derrick Needs . . .

stiffleg, guy, pole, setter, A-frame. In a wide variety of makes, capacities, prices. New and used. For rent or sale.

THIS MONTH'S SPECIAL

DERRICKS
1—30 ton Wiley Mdl. F Steel Stiffleg, 32' mast, 37'3⅞" stiffleg, 100' boom, 27' laylegs, 12' B.W. With 60' boom rated 30 tons @ 38', 25 ton @ 44', 20 ton @ 50' and 15 ton @ 57'.
2—10-15 ton all steel Stiffleg Derricks, 60' booms, 10' bullwheels. Hook work or clamshell.
2—American Terry steel erectors guy derricks, 70' mast, 60' boom, rated 6 ton @ max., 11 ton @ 20'. Also have extra center sections.

AIR COMPRESSORS
Portable, 2-stage
3—500 cu. ft. Ing. Rand, 2 powered by Wauk-Hesselman Diesel engines, one on pneu. tires and one on steel wheels, 1 powered by Waukesha gas eng. on steel wheels.
2—160' Sullivan, powered by Caterpillar D-4600 Diesel engines.
WE HAVE A LARGE SELECTION OF COMPRESSORS, ALL SIZES.

BINS
1—100 ton Blaw-Knox Model P-3100, 3-compt. batching bin, with 1½ yd. ⇄63B weigh batcher. For rental only.

CAR PULLERS
1—Mead Morrison ⇄952, 7½ HP 3/60/220 motor, to handle 1 to 5 loaded cars.
1—10 HP Fridy capstan type, 3/60/220, 10,000⇄ @ 45 FPM.

CRANES, CRAWLER
1—Bucyrus Erie Mdl. 33B 1¼ yd. Crane, Ser. 16502, powered by 8 cyl. V8 LeRoi gas eng., 50' boom, fairleads and vertical tagline.
1—Model 501 Koehring ⇄1071, 60', 70', 80' boom, 18' jib, Mdl. K. Wisc. gas eng. Cap. 40,000⇄ @ 12'. Shpg. wt. 97,200⇄.
1—1½ yd. P&H 655-A Diesel Crane or Dragline, Ser. 6426. 75' boom, 20' jib. Power Cat. D-13000 Diesel eng. Hi gantry. Wt. 82,900⇄. Rental only.

CRANES, LOCOMOTIVE
1—25 ton Industrial Brownhoist Type G, 40-50-60' boom, Nat'l. Board Boiler, 150⇄.

75 KW AC DIESEL GENERATOR
1—75 KW (92.5 KVA) Diesel Generator, 220/440/60/3, powered by Cat. D-13000 Diesel engine, complete with electric starting and control panels. LATE MODEL. BARGAIN.

HOISTS, ELECTRIC, GAS & STEAM
WE HAVE A LARGE SUPPLY OF HOISTS, ELECTRIC, GAS & STEAM POWERED, 1, 2 & 3/DRUM.

PUMPS
1—New 3" suction 2" discharge Dayton Dowd (Peerless) 15 HP 3/60/220/440, 80 GPM @ 300', 140 GPM @ 210' 220 GPM @ 100'.
1—4" Goulds 4-stage jetting pump Mdl. 250-A-503-2. With 95 HP 6 cyl. Buda gas eng. water cooled manifold. Cap 450 GPM @ 110⇄ pressure, 350 GPM @ 185⇄, 250 GPM @ 215⇄, 175 GPM @ 235⇄.

PUMPCRETE
1—Mdl. 190 Rex single pumpcrete ⇄CP114, 4 cyl. Waukesha gas eng.; with remixing hopper powered by 4 cyl. LeRoi gas eng. Recommended pumping distance 1000' with 7" pipe. Max. vertical lift 110'. Cap. 23 to 30 cu. yds. per hour.

ROAD ROLLERS
1—10 ton 3-wheel Hercules, Diesel power, hydraulic steering, wt. 24,500⇄.
1—10 ton 3-wheel Huber, Buda gas engine, hydraulic steering, wt. 20,000⇄.
1—9 ton Acme Tandem Road Roller, Hercules gas eng., power steering, water ballast tank.

Partial list only—Please let us quote on your requirements.

CLIFTON HEIGHTS, PA.
Box J-608, Sub. of Phila.
Phone MAdison 6-2200

PITTSBURGH 30, PA.
Box J-933
Phone FEderal 1-2000

ECA
EQUIPMENT CORPORATION OF AMERICA

CHICAGO 12, ILL.
1155 S. Washtenaw Ave.
Phone NEvada 8-2400

NEW YORK 7, N. Y.
30-J Church St.
Phone WOrth 2-0036

NEW CONVEYOR IDLERS
2000—36 In. Troughing 6" Rolls
1400—42 In. Troughing 6" Rolls
100—60 In. Troughing 6" Rolls
600—36 In. Return 5" Rolls
450—42 In. Return 5" Rolls
25—60 In. Return 5" Rolls
All above fitted Ball Bearings

30 COMPLETE NEW TERMINAL SETS WITH LAGGED HEAD PULLEYS

NEW VIBRATING SCREENS
4 Allis-Chalmers 6' x 14'—2 Deck Rypl-Flow

NEW MERRICK WEIGHTOMETERS
10 Type E for 36 in. Belt

NEW DORR RAKE CLASSIFIERS
3—7 ft. x 30 ft. Type DSFX

R. C. STANHOPE, INC.
60 E. 42nd St. New York 17, N. Y.

USED

1949 Hough ½ yd. Payloader
1952 Hough ¾ yd. Payloader

EDWARD EHRBAR, INC.
29 Meserole Ave., Brooklyn 22, N. Y.
EVergreen 3-5000

FOR SALE

1—Used Caterpillar Tractor D7 with angle-dozer.
1—Used Caterpillar Tractor D4 with angle-dozer, late model.
1—Used Allis Chalmers Tractor HD14.
2—Used Insley ½ yd. Diesel Crawler Cranes, one equipped as a Shovel, late models.
2—Used Insley ½ yd. Gas Crawler Cranes, one equipped as a Backhoe, late models.
1—Used Lorain 1¾ yd. Diesel Crane.
1—Used General 10 ton rubber tired self propelled Crane.
1—Used Bucyrus Erie 15B, Combination shovel, drag line, late model.
1—Used Link Belt Speeder model LS-40, ⅜ yd. shovel and crane.
3—Used 500 foot Ingersoll Rand Diesel Air Compressors.

All above equipment in good condition.

"Try us first, for good dependable equipment at the right price."

PHONE, WRITE OR WIRE

NATIONAL MACHINERY COMPANY
P. O. BOX 2305, NORFOLK 1, VA.
PHONE: NORFOLK 51107

FOR SALE

New Material—Immediate delivery from stock

3 x 3 x ¼ up to and including 6 x 6 x ¾ Angles
4" up to and including 15" Channels
4" I Beams up to and including 36" WF Beams
3/16" up to and including 2½" Plate
H Beams and Pile Sections
Also all sizes Excellent Used Material

Phone or Wire your steel requirements

HY DRACHMAN STEEL CORP.

Warehouse
14-23 34TH AVENUE
ASTORIA, NEW YORK
AStoria 8-4484 8-8023

Sales Office
563 EAST TREMONT AVE.
NEW YORK CITY, N. Y.
CYpress 9-5440

PILING

STEEL SHEET PILING

BELVAL Z
perfect range of corrugated sections most economical section modulii

AMERLUX
STEEL PRODUCTS CO
NEW YORK 17, N. Y.

Direct Mill Office of the
ARBED
STEEL MILLS
IN LUXEMBOURG

BELVAL P *straight web section best deflected hooking*

Write... Wire... Phone... TODAY

For Our New Listings **300 ITEMS**
USED CONSTRUCTION EQUIPMENT
AVAILABLE FOR IMMEDIATE DELIVERY

For Further Information Contact
DEPARTMENT C
LACLEDE 8900 L. D. 5, ST. LOUIS

All Equipment Owned by
JOHN FABICK TRACTOR COMPANY
3100 GRAVOIS AVENUE ST. LOUIS 18, MISSOURI

FOR SALE
COMPLETE STEEL STIFF LEG DERRICK

American Hoist & Derrick Co. 65 ft. Boom, 90 ft. Mast, 40 H.P. Motor with Derrick House and Electrical Control.

JOSEPH SOUTAR COMPANY
9 Somerset St.
Portland, Maine

SACRIFICE SALE — CONTRACTOR RETIRING ALL EQUIPMENT EQUAL TO NEW

1 Caterpillar D8 DDPCU Bulldozer
2 Super "C" Tournapulls (New Tires) (Tractor Sold Only With Tournapulls)
2 Bucyrus Erie 22B Diesel ¾ C.Y.
1 Lorain 820 Shovel & Crane 2 C.Y.
2 Caterpillar #12 Road Grader

FS-4521, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

RENT STEEL SHEET PILING

"Faster From Foster"—the exact lengths and sections — all standard makes—of Rental Piling to meet your job needs. Also Rent: Pile Hammers and Pile Extractors.

RAILS • TRACK ACCESSORIES • PIPE • WIRE ROPE
L.B. FOSTER CO.
Pittsburgh 30, Pa. New York 7, N.Y.
Chicago 4, Ill. Houston 2, Tex.

5000 tons Pierced Steel Planking 10' X 16"

for runways, 85-90 p.c. serviceability
U.S. 83 per ton F.A.S. Pacific Area.

ERLAND BLOMQVIST (ENGINEERS) LTD
88-90 Chancery Lane, London, W. C. 2
Tel.: CHA 2401, Cable address, Ermex London

FOR SALE

Ransome 34E single drum paver, Serial number 15350.
Cummins Diesel Engine No. 48029.
All in excellent condition.

JOHNSON-GREENE COMPANY
616 Ann Arbor Trust Building
Ann Arbor, Michigan
Telephone 2-2537

We do a Nation-Wide business in

STEEL SHEET PILING

IMMEDIATE SHIPMENT

485 pcs. 85-20 ft. Beth. SP-6A—Maryland
240 pcs. 60 ft. Carn MP-116—Illinois
235 pcs. 50 ft. Larssen III New—Florida
173 pcs. 48 ft. Inland 1-23—Chicago
88 pcs. 30 ft. Inland 1-27—Mississippi

Other lengths & sections used & new at other locations in United States for rent.

We have Nation-wide reputation for effecting QUICKEST SHIPMENTS

All sizes Vulcan & McKiernan Pile Hammers & Extractors for rent—Shop Rebuilt

Regardless of location of job, Wire, Write or Phone

MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St., Chestnut 4474 St. Louis, Mo.

HOIST AND SWINGER FOR SALE

One—Thomas—2 drum electric hoist, 220/440 volt, 60 cycle, with attached swinger. Line Pull 12,000#. In good condition. Location—Kansas City, Missouri. Full price $6,500 f.o.b. Kansas City, Missouri.

This unit may be seen by contacting Mr. T. H. Sandvik at Kansas City, Missouri, Benton 2509. Nite: Victor 9731.

For further information contact

Subgrade Engineering Corporation
2123 South 56th Street, Omaha, Nebraska
Phone Walnut 7796,
or, 8221 Atlantic Avenue, Bell, California,
Phone Logan 5-7421

FOR SALE

Lima Paymaster hoe & crane 50 ft. boom good condition gas motor $13,000.00
Link Belt 1½ yd. crane 50 ft. boom fair condition $6,500.00

BOMBACE BROS. CONTRACTORS
236 Webster Ave. New Rochelle, N. Y.
New Rochelle 6-6524

PUMPCRETES

Rebuilt Current Models
For Sale or Rent
CONCRETE EQUIPMENT COMPANY
312 E. Wisconsin Ave.
Milwaukee 2, Wis.

STEEL SHEET PILING

213 PCS. ZP-32 LB. 50 FT. Z BAR.
243 PCS. BETH. DP-1—50 FT.
550 PCS. CARNEGIE M-116—45 FT.
165 PCS. BETH. AP-3—60 FT., 35 FT. & 20 FT.
298 PCS. BETH. DP-2—60 FT.
600 PCS. BETH. SP-6-A, 22—30—40—80 FT.
41-B & MARION 32 STEAM CRANES.
3—11B 3 & 5S M.K.T. HAMMERS

STANHOPE, 60 E. 42nd St., N. Y. 17, N. Y.

5—9FDT Euclid Bottom Dumps, 13 cu. yd. capacity, Cummins Diesel Engines. Machines are in excellent condition.

1—Caterpillar Grader, Model 112, Serial #9M890. Excellent condition.

VILBRO EQUIPMENT CO., INC.
233 North Ave., Westfield, N. J.

FOR SALE
OAK PILING

450 pieces peeled 40' to 45' long. Immediate delivery. Location: Mansfield, Ohio

J. M. FOSTER & COMPANY
BOX 622, GARY, INDIANA

BARGAINS - BARGAINS - BARGAINS

FOR SALE

1—2 cu. yd. model 82 Lorain dragline $17,500.00 (a real bargain)
1—5 ton Buffalo-Springfield tandem roller 1,900.00
1—60 ton Rogers lowboy trailer 3,500.00
1—Haiss heavy duty bucket loader 2,500.00
1—Barber Greene heavy duty bucket loader 2,750.00
1—Cleaver-Brooks asphalt booster 2,200.00
1—28 x 72 portable Pioneer drier with portable dust collector 20,000.00
1—Model 848 heavy duty portable Barber Greene asphalt pugmill with feeder 8,500.00
(make an offer on drier, dust collector, & mixer)
1—4 x 12 two-deck vibrating Pioneer screen 2,250.00
1—4 x 12 two-deck vibrating Tyler screen 1,500.00
1—10-ton Buffalo-Springfield roller, 3-wheel 2,000.00
1—Grace asphalt booster 1,750.00
5—15 cu. yd. St. Paul dump bodies 600.00 each, as is
2—24 x 16 Pioneer roll crushers 3,400.00 each
3—4 cylinder air cooled Wisconsin motors 200.00 each
6—5 KW International light plants 750.00 each
1—1 cu. yd. heavy duty Page dragline bucket 440.00
1—2 cu. yd. clam bucket 1,750.00
1—Set 18 ton pitless truck scales 975.00
Complete set Johnson's dual low pressure burners for asphalt drier 1,200.00

The above equipment is well worth the prices asked and represents surplus equipment from our contracting business.

Subject to Prior Sale

Call H. C. Shirley
Telephone #790
Monroe, N. C.

PRICES F.O.B. MONROE, N. C.

FOR SALE

SEVENTEEN (17) BOTTOM DUMP EUCLIDS

13 Cubic Yard Capacity—Model 25FDT 150 H. P. Cummins Diesel Engines. New 1947—1948—1949, First Class Condition—90% Rubber.

• • •

ONE (1) EUCLID LOADER—MODEL BV5

150 H. P. Cummins Diesel Engines. Machine & Belt in good condition.

• • •

All located Wolf Creek Dam, Jamestown, Ky.

As is—Where is—Subject to Prior Sale.

J. A. JONES CONSTRUCTION CO.
JAMESTOWN, KY.
PHONE 3900

SALE — RENT
GUARANTEED LIKE NEW

1949 LORAIN 820 2 C.Y.
HI-FRONT SHOVEL, CRANE, DRAG

CHEMICAL CO.
145 W. 63 St., N.Y.C. MU 5-6826

RENT or SALE
Truck Crane: Bay City 20-ton
Model 180—T-60 Carrier
A. C. R. Co.
19615 Nottingham Rd.
Cleveland 10, Ohio
KEnmore 1-8000

FOR SALE
New Wire Rope Blocks
18" Single 20 Ton with S. Shackle..... $25.00
18" 3-Sheave 30 Ton with Shackle..... 50.00
18" 4-Sheave 30 Ton with Shackle..... 75.00
#32 Drop Forge Hooks, New..... 2.00
ABERTHAW COMPANY
133 Southampton St. Boston 18, Mass.

FOR SALE

6 TD24 INTERNATIONAL Tractors, 1950 Model, with/without bulldozer blades.

1 BUCKEYE FINEGRADER, practically new.

2 SEAMAN PULVIMIXERS, 1949, self-propelled.

DAVIS CONSTRUCTION CORP.
Post Office Box 278
Hicksville, New York
Hicksville 3-0022

FOR SALE

NORTHWEST 25 shovel & drag
NORTHWEST 6 shovel & drag
NORTHWEST 6 Backhoe
NORTHWEST 80-D shovel
NORTHWEST 95 Dragline
BUCYRUS ERIE 22-B shovel
BUCYRUS ERIE 54-B shovel & drag.
BUCYRUS ERIE 120B dragline
BUCYRUS ERIE 170B shovel
MANITOWOC 3000 dragline
MANITOWOC 4500 dragline
EUCLID Rear Dump Trucks
CATERPILLAR TRACTORS D-7 and D-8

FS-3474, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

STEEL FOR CONSTRUCTION

Std & WF Beams
Channels & Angles

100 Tons Beams STD 4-5-6-8-10-12" 40'/60'
150 Tons Beams WF 6-8-10-12-21" 40'/60'
100 Tons Channels 5-6-7-8-10-12" 40'/60'
100 Tons Angles 3" x 3" 4" x 4" 35'/45'

All offered subject to prior sale.

Write—Wire

RIDGE BUILDERS SUPPLY, INC.
1700 E. Ridge Pike Norristown, Pa.
Box 291 Phone 8-4231

BULLDOZER PARTS—BARGAINS
for all Caterpillar and International models
Rollers—Idlers—Sprockets—Pads—
Bellow-seals—Injectors—Pumps—
Cylinder Heads—etc.
SPECIAL: Clark Airborne Bulldozer with winch. Excellent.
BENDIX MACHINERY CO., INC.
401 Broadway, New York 13 — Tel: Canal 6-5693

Used Shovel Attachments

1—NORTHWEST Model 6
1—LORAIN Model 40.
Excellent Condition
HODGE & HAMMOND, INC.
720 Garrison Ave. N. Y. 59, N. Y.
PHONE: Kilpatrick 2-2400

DEPENDABLE USED MACHINES

Special,—20" x 40' port. belt conveyor, rebuilt with all new idlers; gas power. Come see it!

Universal ½ yd. hoe
Hanson truck crane
P&H ½ yd. crane
Lorain 40 shovel
Gallon motor grader
Cedar Rapids 10 x 36 r.b. crusher
Gruendler 10 x 36 r.b. crusher
Cedar Rapids 15 x 36 p.b. crusher
Pioneer 9 x 24 port. crusher
Eagle coal or cinder crusher
Badger 203 ditcher
Morris 10" gravel pump
Falcon 6" sand pump
Pioneer 4 x 8 screen
3 yd. Dumpcrete

For rent,—cranes, draglines, backhoes, buckets, and all other accessories.

10002 Southwest Highway, TRACTOR & EQUIPMENT CO., Oak Lawn, Illinois

NEW GM-6-71 DIESEL ENGINES FOR:

- Allis Chalmers Tractor
- LeTourneau Roadsters
- Euclid Dumps

Complete with all accessories except electrical. U.S. surplus. Warranted, perfect condition.

FULL PRICE F.O.B. Pgh.— $1850.00

Allowance for your old engine.

FORBES MOTOR COMPANY
P.O. Box 8660
Pittsburgh 21, Penna.
Phone: VAlley 4-0100

EQUIPMENT FOR SALE

1—Rex 8" Pumpcrete Machine, Serial No. CPD-175—Electric drive and 1200 ft. 8" pipe and fittings.
1—Water filtration plant, complete with tanks, pumps and all accessory equipment. Capacity approximately 15,000 gallons.
1—American 20 ton Structural Gin Pole.
1—American General Purpose Hoist 2 drum, w/100 H. P. Minn. Moline Engine.
Complete description and prices this equipment given on request.

DONOVAN-LOVERING-BOYLE
P. O. Box 878
South Hill, Virginia

RAILS-TIES
TRACK ACCESSORIES

COMMERCIAL METALS COMPANY
BOX 1046 DALLAS, TEXAS

PART FOR SALE—PART FOR RENT

CRANES—DRAGLINES—CLAMSHELLS
Manitowoc 3500's, 60-ton capacity, fully equipped, and others.
AIR COMPRESSORS
Ingersoll Rand 600' Gyroflow Rotary Type
BUCKETS
1½—2—2½ cu. yd. Page—Owens—Williams—Blaw Knox—Rehandling and Digging
PILE HAMMERS
Vulcan #1—McKiernan-Terry S-5—11B-3
PILE DRIVERS COMPLETE
BULLDOZER—CATERPILLAR D-8.
Reply to:
Clemens Construction Company
P. O. Box No. 266, West New York, N. J.

PIPE

EST. 1904
DAVIDSON
PIPE COMPANY INC.
ONE OF THE LARGEST STOCKS IN THE EAST
Seamless and Welded ⅛" to 26" O.D.
All wall thickness Manufactured.
Specialty large sizes.
Cutting — Threading — Flanging — Fittings — Valves.
Call GEdney 9-6300
50th St. & 2nd Ave., B'klyn 32, N. Y.

RAILS NEW AND RELAYING
TRACK ACCESSORIES
"FASTER FROM FOSTER"
Try us for all of your rail needs. We're buying daily — replenishing our stocks in all sizes. Complete stocks of All Track Tools & Accessories.

PIPE ✔ PILING ✔ WIRE ROPE & SLINGS
L. B. FOSTER CO.
Pittsburgh 30, Pa. New York 7, N.Y.
Chicago 4, Ill. Houston 2, Tex.

FOR SALE

Athey Model 3 hydraulically controlled Force-Feed loader, self-propelled, with 100-hp. Ford V-8 engine, heavy-duty low-speed axle, 1200x24 tandem rear tires, 750x20 front tires, and Athey portable breaker with Caterpillar 315X engine.

BORCHERT-INGERSOLL, INC.
2161 University Ave., St. Paul, Minn.
NEstor 6391
3200 W. Superior St., Duluth, Minn.
Phone 4-4831

PIPE AND ACCESSORIES
IF IT'S MADE, WE HAVE IT!
Seamless and Welded—Every Size and Wall Thickness—Cast and Wrought Iron, Steel, Alloys
POWER PIPE FABRICATING
Bending, Coiling, Flanging, Threading, Beveling, Lining, etc.
Valves & Fittings
Piling & Fittings
Culverts
SPEED-LAY PIPE SYSTEMS
Write for brochure
ALBERT
PIPE SUPPLY CO., INC.
Berry at North 13th St.
Brooklyn 11, N. Y.
Phone EVergreen 7-8100

RAILS *New and Relaying*

TRACK MATERIALS AND ACCESSORIES CARRIED IN STOCK
SWITCH MATERIAL • SPIKES & BOLTS • TRACK TOOLS • TIES • TIE PLATES • BUMPERS • COMPLETE SIDE TRACKS
BUILDERS STEEL SUPPLY CO.
4201 WYOMING • P.O. BOX 188 • DEARBORN, MICH.

FOR IMMEDIATE SALE

1 Used Worthington-Ransome 34E Dual Drum Paver Serial No. 14714. Excellent condition, ready to go to work. Paver can be demonstrated at Carl Goodwin & Sons, 500 DeLano St., Allegan, Michigan. Tel: Allegan 65 or contact Norman Goodwin on the job by calling Lansing, Mich., 2-3572.

FOR SALE—*Immediate Delivery*
C. I. Water Pipe A.W.W.A. Standard
BELL & SPIGOT—10 inch, 12 inch, 16 inch, 20 inch, 24 inch and other sizes
FLANGED PIPE— 4 inch, 6 inch, 8 inch, 10 inch, 12 inch
C.I. Water Pipe Fittings—B & S—and Flanged—All kinds and sizes
SOIL PIPE—EXTRA HEAVY—8 inch—10 inch 12 inch—16 inch
The above subject to prior sales
TAGCO, INC.
111 Front Street Hempstead, L. I., N. Y.
Tel.—Hempstead 2-5535 or 2-8857

NEW—RAILS—Relayers
All sizes and weights. Also frogs, switches, spikes, bolts, tie plates, contractors' and mine equipment carried in stock.
M. K. FRANK
480 Lexington Ave. Park Bldg.
New York, N. Y. Pittsburgh, Pa.
Reno, Nevada Carnegie, Pa.

FOR SALE
NORTHWEST MOBILE CRANE
Model 41, gasoline powered, Serial #6401 complete with 44 ft. crane boom. Suitable for 1 cu. yd. clam shell bucket. Mounted on 6-cylinder Mack Chassis. Mott Haven mounting. Completely rebuilt. $12000.00.
BOX 495, CHESTER, PA.

PIPE FOR SALE
24" d. Corrugated Galvanized in 30' lengths—approximately 5500'.
Used once for ventilation
Duct in 12' d. Tunnel—reasonable & stored in Cleveland, O.
Contact: **THE KALILL CO.**
4161 W. 150th St. Cleveland 11, Ohio
Phone: CL-1-3848

IMMEDIATE SHIPMENT
RAILS
NEW
RELAYING
SWITCH MATERIAL
ALL TRACK ACCESSORIES
MIDWEST STEEL CORPORATION
CHARLESTON 21, W. VA.

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY

Bids: June 26, 1952

Mental Hospital, New Jersey

Notice is hereby given that sealed proposals will be received by the State of New Jersey for work in connection with a construction project encompassing sewerage system for Medical-Surgical-Reception Building, Kitchen and Dining Building, Boiler House, Laundry Building and miscellaneous service buildings at the Fourth Mental Hospital, Winslow Township, Camden County, New Jersey.

Bids will be received in the office of the Director, Division of Purchase and Property, Room 318, State House, Trenton 7, New Jersey between the hours of 1 P.M. and 2 P.M. Daylight Saving Time on Thursday, June 26, 1952, and will be opened and read in public immediately thereafter. No bid received after 2 P.M. will be accepted.

Separate bids will be received for:
Sewerage system for Medical-Surgical-Reception Building, Kitchen and Dining Building, Boiler House, Laundry Building and miscellaneous service buildings at the Fourth Mental Hospital, Winslow Township, Camden County, New Jersey.
Bids must be made on prepared "Form of Proposal" and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than five (5) per cent of the total base bid or by a bid bond in like amount.

Bids not submitted on prepared "Form of Proposal" sheets or enclosed in other than specially addressed envelopes will be considered informal and will be rejected.

Form of Proposal, Instructions to Bidders, Contract Documents, Drawings and Specifications may be examined at office of the Architect, Epple & Seaman and Leslie M. Dennis, Associate Architect, 901 Broad Street, Newark, New Jersey or at the office of the Director, Division of Purchase and Property, State House, Trenton, New Jersey.

The Director reserves the unrestricted right to accept or reject any or all bids or to waive informalities therein.

The successful bidders will be required to qualify for surety bond in full amount of contracts, of a company authorized to do business in the State of New Jersey.

No bid shall be withdrawn for a period of two (2) calendar months subsequent to opening of bids, without the consent of the State of New Jersey.

One set of complete documents for the proposed work may be obtained upon application to the Architect on deposit of a certified check in the amount of $50.00 drawn to the order of the Treasurer of the State of New Jersey. This deposit will be refunded to any bidder upon returning such set in good condition within ten (10) days after opening bids.

A Financial and Experience Questionnaire must be submitted to the Director of the Division of Purchase and Property, prior to submission of bids.

DEPARTMENT OF THE TREASURY
Division of Purchase and Property
Fred V. Ferber, Director

Bids: July 16, 1952

Construction Water and Sewerage Improvements

For the
City of Barbourville, Kentucky

Sealed bids or proposals for furnishing Bids: July 16, 1952 materials and labor for constructing Water and Sewerage Improvements for the City of Barbourville, Kentucky, will be received at the office of the Mayor, City Building, Barbourville, Kentucky, until Three o'clock (3:00) P.M. Eastern Standard Time, July 16, 1952.

These Water and Sewerage Improvements are comprised of the following Contracts:

Contract 1—Water Mains
Contract 2—Storage Reservoir
Contract 3—Water Treatment Plant
Contract 4—Sanitary Sewers and Pumping Stations
Contract 5—Sewage Treatment Plant

The bidder may bid on any or all of the above Contracts.

Proposals shall be addressed to the City of Barbourville, Kentucky, sealed and endorsed "PROPOSAL FOR WATER AND SEWERAGE IMPROVEMENTS — CONTRACT NO. 1, 2, 3, ETC.

Each proposal shall be accompanied by a certified check on some solvent bank drawn payable to the City of Barbourville, Kentucky, in an amount equal to ten (10%) per cent of the price bid, such check to be forfeited to the City of Barbourville, Kentucky, as liquidated damages in case of failure on the part of the successful bidder to execute the contract and furnish satisfactory surety bond within ten (10) days after the acceptance of the proposal. In lieu of a certified check bidders may furnish a bid bond satisfactory to the City of Barbourville, Kentucky.

The check of the successful bidder will be returned after the contract is executed and the necessary bond furnished, and to the unsuccessful bidder after award is made.

Plans, specifications and form of proposal and contract may be obtained at the office of the Mayor, Barbourville, Kentucky, or from Alfred LeFeber & Associates, Consulting Engineers, Woodburn at Lincoln, Cincinnati 6, Ohio, upon deposit of $10.00 for each contract; $5.00 of which will be refunded upon the return of plans and specifications in good condition within thirty (30) days from the date of taking bids.

The City of Barbourville reserves the right to accept any bid or to reject any or all bids and to hold all bids for thirty (30) days before final acceptance thereof.
CITY OF BARBOURVILLE, KENTUCKY
By: Alry Bays, Mayor

Bids: June 26, 1952

General Construction

Notice is hereby given that sealed proposals will be received in the office of the Director, Division of Purchase and Property, Room 318, State House, Trenton 7, New Jersey, for the following:

General construction, miscellaneous metal, ornamental metal, plumbing and drainage, heating and ventilating, and electrical work for a T. B. Unit for the State Colony at Woodbine, New Jersey.
Bids for the above will be received at the office of the Director, Division of Purchase and Property, State House, W. State St., Trenton 7, New Jersey on Thursday, June 26, 1952 at two (2:00) D.S.T. and will be opened and read immediately thereafter. Bids must be made on the standard proposal form, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than 5% of the amount of the bid, cash, in the amount of 5% of the bid or a bid bond in the amount of 5% of the bid, and must be delivered at the above place on or before the hour named, as no bid will be accepted after the hour specified. Bids not submitted on the standard proposal form or enclosed in other than special addressed envelopes will be considered informal and will be rejected. The Director reserves the right to reject any and all bids and to award contract in part or whole if deemed to the best interests of the State to do so. The successful bidder will be required to qualify for surety bond in the full amount of the cotract, of a company authorized to do business in the State of New Jersey.

Plans and specifications, form of bid, contract and bond for the proposed work are on file and may be obtained upon application to the Director, Division of Purchase and Property, State House, Trenton, New Jersey on deposit of twenty-five dollars ($25.00) for each set; this amount to be refunded to the bidder upon receipt of same in good condition within 30 days after the award of the contract.

DEPARTMENT OF THE TREASURY
Division of Purchase and Property
Fred V. Ferber, Director.

Bids: June 17, 1952

Bronze Needle Valves

CONTRACT 411

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M., Eastern Standard Time, on Tuesday, June 17, 1952, for Contract 411, for furnishing, testing and delivering 36-inch and 24-inch bronze motor-operated needle valves and 12-inch bronze motor-operated needle valves with bronze air boxes, complete in every respect, for installation in the Neversink intake chamber of the Delaware aqueduct and in the release water chamber of the Downsville dam, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of eighteen thousand dollars ($18,000.00), for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained at the office of the Chief Engineer, Room 1311, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, RUFUS E. McGAHEN, EDWARD C. MAGUIRE, Commissioners, Board of Water Supply.
RICHARD H. BURKE, Secretary

Bids: July 1, 1952

Water Filtration Plant

Sealed bids will be received by the Palisades Interstate Park Commission, Administration Headquarters, Bear Mountain, New York, until 3:00 P.M. D.S.T. July 1, 1952, for the construction of a water filtration plant in Bear Mountain State Park, Orange County, New York.
Work includes concrete building, pumps, filters and auxiliary equipment necessary for a 1.5 m.g.d. plant.
Full information, specifications and proposals may be secured at Administration Headquarters, Bear Mountain, New York. Payment for plans and specifications is $10.00.
THE COMMISSION RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS RECEIVED.

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION. NOTICE IS HEREBY GIVEN that sealed bids on Specifications No. 703C-260 for furnishing labor and materials and performing all work for the construction of Chadron substation, Transmission Division, Nebraska, Missouri River Basin Project, will be mailed to P. O. Box 280, Casper, Wyoming, or delivered to the office of the Bureau of Reclamation in time for the public opening at 10:30 a.m., Mountain Standard Time, June 26, 1952, at the office of the Bureau of Reclamation, Reclamation Center, Casper, Wyoming. Copies of the standard forms and of the specifications may be obtained from the following offices of the Bureau of Reclamation: Avery A. Batson, Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; and I. J. Matthews, District Manager, P. O. Box 280, Casper, Wyoming. No charge for copies of the specifications and drawings furnished for bidding purposes; for all others $2.50 per copy, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States.

(Continued on following pages)

OFFICIAL PROPOSALS

Bids: June 26, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway & Public Buildings Laws, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on June 26, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. Nickerson, Dist. Engr., 353 Broadway, Albany, N. Y.				
Essex	FARC52-52	Willsboro-Keeseville, Pt. 1, S. H. 1687 Proj. F-407(6)	3.13	Asp. Conc., Ty. 1A, Opt.	$6,000 Plans $10	$102,000
Rensselaer	FARC52-53	East Nassau-Brainard, S. H. 439 East Nassau, S. H. 196 Hoags Corners, S. H. 55 Proj. F-118(3)	7.50	Asp. Conc., Ty. 1A, Opt.	$12,000 Plans $10	230,000
Warren	FARC52-58	Glens Falls-East Lake George, Pt. 2, S. H. 1813 Proj. S-1022(2)	5.20	Asp. Conc., Ty: 1A, Opt.	$9,000 Plans $10	165,000
Warren & Essex	FARC52-54	Loon Lake-Pottersville-Taylor's, S. H. 692 Taylor-Schroon Lake Village, S. H. 745 Proj. F-383(10)	7.69	Asp. Conc., Ty. 1A, Opt.	$16,000 Plans $10	289,000
		DISTRICT No. 2				
		Lacy Ketchum, Dist. Engr., 109 North Genesee St., Utica 1, N. Y.				
Fulton	FARC52-59	Meco-Caroga Lake, S. H. 618 Proj. S-700(2)	5.40	Asp. Conc., Ty. 1A, Opt.	$12,000 Plans $10	213,000
Oneida	FARC52-60	State Bridge-Verona Sta., S. H. 8432 Proj. F-618(3)	2.73	Asp. Conc., Ty. 1A, Opt.	$6,000 Plans $10	116,000
		DISTRICT No. 3				
		William Robinson, Dist. Engr., Weigh Lock Building, Syracuse, N. Y.				
Cortland	FARC52-40 RC52-48	Blodgett Mills-Cortland, S. H. 881 McGrawville, S. H. 378 Proj. F-481(5)	3.05	Asp. Conc., Ty. 1A, Opt.	$8,000 Plans $10	153,000
		DISTRICT No. 5				
		C. R. Waters, Dist. Engr., 65 Court Street, Buffalo, N. Y.				
Cattaraugus	FARC52-49	Arcade-Farmersville, Pt. 2, S. H. 8115 Proj. F-180(2)	1.75	Asp. Conc., Ty. 1A, Opt.=1.7 Mi. Misc. Work=0.04 Mi.	$4,500 Plans $10	82,000
Chautauqua	FARC52-47	Cutting-French Creek, S. H. 939 Proj. F-727(2)	2.87	Bit. Mac. Ty. 1, Pen. Meth.	$7,000 Plans $10	131,000
Chautauqua	FASS52-8	West Oak Hill Co. Rd. 120 Proj. S294(1)	1.80	Bit. Mac. Ty. 1, Pen. Meth.=1.79 Mi. Misc. Work=0.01 Mi.	$4,500 Plans $10	78,000
Niagara	FARC52-41	Cambria-Lockport, S. H. 1045 Sadalsons Cors.-Cambria Center, S. H. 9014 Proj. S-236(2)	2.34	Asp. Conc. Ty. 1A, Opt.	$9,000 Plans $10	170,000
		DISTRICT No. 6				
		H. F. Brumm, Dist. Engr., State Office Building, Hornell, N. Y.				
Schuyler & Yates	FARC52-62	Watkins-Yates Co. Line, S. H. 5334-5334A North Reading-Dundee, Pt. 1, S. H. 5018 Proj. S-800(2)	5.35	Asp. Conc., Ty. 1A, Opt.	$19,000 Plans $10	322,000
Steuben	FARC52-63	Wayland-Dansville, Pt. 1, S. H. 1292 Proj. F-510(2)	3.41	Asp. Conc., Ty. 1A, Opt.	$14,000 Plans $10	245,000
		DISTRICT No. 7				
		Roy F. Hall, Dist. Engr., 444 Van Duzee St., Watertown, N. Y.				
Clinton	FARC52-42	Plattsburg-Chazy, Pt. 2B, S. H. 8088 Proj. F-43(3)	0.98	Asp. Conc., Ty. 1A, Opt.=0.94 Mi. Misc. Work=0.04 Mi.	$6,000 Plans $10	107,000
		DISTRICT No. 8				
		J. S. Bixby, Dist Engr., Pleasant Valley Road, Poughkeepsie, N. Y.				
Columbia	FARC52-55	Claverack-Kinderhook, Pt. 1, S. H. 1919 Claverack-Kinderhook, Pt. 2 & President Van Buren Farm-Valatie, Pt. 1, S. H. 8497 Proj. F-587(4)	11.70	Asp. Conc., Ty. 1A, Opt.	$45,000 Plans $10	838,000
Orange & Rockland	PIP 52-2P	Palisades Interst. Pky Pts. 1 & 2 (Rte. 45-Queensboro)	(2.90 Ace) 9.64	8" Cem. Conc. Pavt. Var. Widths=9.60 Mi. Grading=0.04 Mi. (Asp. Conc., Ty. 1A, Opt. Acc.=0.73 Mi.) (Cem. Conc. Pavt. Acc.=2.17 Mi.)	$135,000 Plans $100	2,456,000
Westchester	FARC52-44	Harts Cors.-White Plains, S. H. 1370 Proj. F-643(12)	0.83	Asp. Conc., Ty. 1A, Opt.	$3,300 Plans $10	61,000
		DISTRICT No. 9				
		F. W. Donovan, Dist. Engr., 71 Frederick St., Binghamton, N. Y.				
Broome	FARC52-56	Bettsburg-McClure, Pt. 1, S. H. 8266 Proj. F-360(7)	5.94	Asp. Conc., Ty. 1A, Opt.	$15,000 Plans $10	287,000
Delaware	FARC52-45	Andes-Margaretville, S. H. 8017 Proj. F-69(5)	4.75	Asp. Conc., Ty. 1A, Opt.	$14,000 Plans $10	257,000
Delaware	FARC52-39	Deposit-Hales Eddy, S. H. 5045 Hales Eddy-Hancock, S. H. 5167 Proj. F-336(12)	7.31	Cem. Conc. Pavt. 7.11 Mi. Asp. Conc. Ty 1A, Opt. 0.20 Mi.	$185,000 Plans $25	3,400,000
Otsego	FARC52-57	Colliers-Maryland, S.H. 5240-5240A Proj. F-471(7)	5.69	Asp. Conc., Ty. 1A, Opt.	$13,000 Plans $10	239,000
Sullivan	FARC52-46	Narrowsburg-Callicoon, Pt. 3, S. H. 8449 Callicoon-Long Eddy, Pt. 1, 2, 2A & 3, S. H. 8501-8494-8508 Proj. F-502(13)	4.46	Bit. Mac. Ty. 1, Pen. Meth.	$7,000 Plans $10	133,000
		DISTRICT No. 10				
		J. J. Darcy, Dist Engr., Montauk Highway at Little East Neck Rd., Babylon, L. I., N. Y.				
Nassau	PSC5466 & 14337	Elim. of the Gr. Crossings of 1 48 Terrace Pl. & Central Av. in Vill. of Valley Stream with the Long Island Railroad		8" Cem. Conc. Pavt. 44' Var. Wide=0.14 Mi. Elev. Tracks 1.34 Mi. RR Sep. 65' Plate Girder RR Sep. 66' 6½" Plate Girder	$120,000 Plans $25	2,250,000
Nassau	BP 52-49	Point Lookout Beach Protection	....	3 Stone Jetties	5% of Bid Plans $10	741,000

OFFICIAL PROPOSALS

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders". When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated. The right is reserved to repect any or all bids.

B. D. TALLAMY
Supt. of Public Works

Bids: June 24, 1952

Reconstruction of Bridge Decks

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

For the reconstruction of bridge decks on the following bridges: Rancocas Creek Bridge, Route 25 at Bridgeboro, Burlington County; and Beach Thorofare Bridge on the Ocean City-Somers Point Road, at Ocean City, Cape May County. The principal items of construction are:

Estimated:

36,850 lbs. Structural Steel
7,290 sq. ft. Grid Flooring
1.3 M.B.M. Timber Structures

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 24, 1952, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

OFFICIAL PROPOSALS

Bids: June 20, 1952

New York State Highway Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on Thursday, June 26, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1 G. L. NICKERSON, District Engineer, 333 Broadway, Albany, N. Y.				
Schenectady	D.A. 52-2	Access Road to Alco Testing Grounds Proj. AD-2	0.76	Asp. Conc. Ty. 1A, Opt.	$1,500 Plans $10	$87,000
		DISTRICT No. 4 J. P. LARSEN, District Engineer, Barge Canal Terminal, Rochester, N. Y.				
Livingston	L.S.P 52-1	Letchworth State Park: East Entrance Road, North End	1.73	Bit. Mac. Pen. Method	$7,000 Plans $10	$126,000

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

Bids: July 1, 1952

Intercepting Sewers

Sealed proposals for furnishing materials and doing all work required for the construction of Intercepting Sewers with Intercepting Chambers, Manholes and appurtenances and the Sewage Treatment Works in Bayonne, N. J., will be received by the Board of Commissioners in the Assembly Chamber of the City Hall, Bayonne, N. J., Avenue E and 30th Street, at

8 P. M., July 1, 1952

at which place and time they will be publicly opened and read.

Separate proposals will be taken on the five divisions of the work as follows:

Contract A. Intercepting Sewers, Sewage Treatment Works, West Side Pumping Station, Force Main and appurtenant work.

Contract B. Plumbing Work, Sewage Treatment Works and Plumbing Station.

Contract C. Heating and Ventilating, Sewage Treatment and West Side Pumping Station.

Contract D. Electrical Work, Sewage Treatment Works and Pumping Station.

Contract E. Steel Work.

In accordance with Section 40:50-5 of the Revised Statutes of the State of New Jersey, bidders will be required to furnish a financial statement and complete questionnaire to establish the bidders' financial standing, experience and ability to perform the work. Within five days after submission of the financial statement and questionnaire if approved by the City, bidders will be furnished plans and specifications on deposit of $100 for Contract A and $20 each for Contracts B, C, D or E. Forms of questionnaire and plans to qualified bidders may be obtained at the office of Clyde Potts Associates, 30 Church Street, New York City or the office of the City Clerk, City Hall, 30th Street and Avenue E, Bayonne, New Jersey. The deposit will be returned to bidders who submit bids and return the plans in good condition before August 1st, 1952.

A certified check or bank draft payable to the City of Bayonne in the amount of 10% of the bid or a satisfactory bid bond in the sum of 10% of the bid executed by the bidder and a surety company authorized to do business in the State of New Jersey, shall be submitted with each bid.

Each proposal must be accompanied by the appropriate surety's consent, by a surety company qualified to do business in the State of New Jersey, binding itself to become surety for the full and faithful performance of the contract in an amount equal to 100% of the contract price for the protection of all persons furnishing materials or labor for fulfilling this contract in accordance with R. S. 2:60-207 etc.

In the event that check or bank draft is delivered with the proposal as aforesaid, same shall be returned to all unsuccessful bidders upon the award of the contract to the successful bidder.

All proposals must be submitted to the City Clerk at the time specified in the advertisement for proposals. None will be accepted by mail nor will any proposal be received subsequent to the time specified in this advertisement.

No bid shall be withdrawn for a period of sixty (60) days subsequent to the opening of bids without the consent of the Board of Commissioners of the City of Bayonne.

The City reserves the right to reject any or all bids and to waive any informality in the bids.

SADIE C. MASON
ACTING CITY CLERK

Dated: May 29, 1952

Bids: July 16, 1952

Ejector Stations, Sewage Meter & Garage

THE LINDEN-ROSELLE SEWERAGE AUTHORITY
LINDEN, NEW JERSEY

1. Sealed proposals for the construction of two sewage ejector stations, a sewage flow meter and a garage in the City of Linden, New Jersey, will be received by the Linden-Roselle Sewerage Authority in the Council Chambers, City Hall, Linden, until 8:00 P.M., E.D.S.T. on Wednesday, July 16, 1952, and there publicly opened and read immediately thereafter.

2. The work will consist of providing all labor, materials, equipment and incidentals required for the construction of the following:

CONTRACT IV: Ejector Stations, Sewage Flow Meter and Sewers. Included in this Contract are the substructures of two Sewage Ejector Stations; Ejector Equipment and Piping; incidental Sewer Work and a concrete flume-type flow meter with equipment.

CONTRACT XI: General Construction—Garage And Ejector Station Superstructure.

CONTRACT XI-A: Structural Steel—Garage And Ejector Stations.

CONTRACT XI-B: Heating & Ventilating—Garage.

CONTRACT XI-C: Plumbing—Garage.

CONRACT XI-D: Electrical Work—Garage & Ejector Stations.

The garage structure will be a one-story concrete and brick building, about 85 ft. by 28 ft. in plan. The Ejector Station Superstructures will be two one-story 12 ft. x 14 ft. brick and concrete block buildings.

3. Plans, Specifications, Bidding and Contract Documents may be examined at the Office of the Consulting Engineers, ALEXANDER POTTER ASSOCIATES, 50 CHURCH STREET, NEW YORK 7, N. Y., and there obtained upon the following deposit per set.

For Contracts IV, XI to XI-D, Inclusive $30.00
For Contracts XI to XI-D, Inclusive $25.00
For Contract IV, XI, XI-A, XI-B, XI-C, XI-D, Individually $15.00

Full refund will be made to actual bidders for the return of One (1) set, in good condition, within Two Weeks after closing date for receipt of bids; refund for return of all other sets, in good condition, within the same period, will be Fifty Percent (50%) of the deposit.

4. All proposals must be on the form contained in the Specifications.

5. All bids must be accompanied by a Certified Check or acceptable Bidder's Bond in the amount of Ten (10%) Percent of the amount of the Bid, made payable to the Linden-Roselle Sewerage Authority. Said checks or bonds will be returned to the unsuccessful bidders not later than Thirty (30) Days after Opening Of Bids.

6. The successful bidder in each of the several Contracts will be required to furnish a Performance Bond conditioned upon the faithful performance of the Contract and upon the payment of all persons supplying labor and furnishing materials on the construction of the work.

7. No bidder may withdraw his Bid within Thirty (30) Days after closing date for receipt of bids.

8. The Authority reserves the right to reject any or all bids and to waive any informality in the Bid.

BY ORDER OF THE SECRETARY OF THE LINDEN-ROSELLE SEWERAGE AUTHORITY
OTTO P. KALNING

DATED: June 11, 1952.

Bids: July 2, 1952

Lincoln Tunnel

THE PORT OF NEW YORK AUTHORITY
NEW YORK APPROACH
DECKING OVER NEW YORK CENTRAL RAILROAD TRACKS BETWEEN WEST 40TH AND WEST 41ST STREETS
CONTRACT LT-150.003

Sealed proposals for the construction of decking over the New York Central Railroad tracks between West 40th and West 41st Streets at the New York approach to the Lincoln Tunnel will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111-8th Ave., New York 11, until 11:00 A.M. Wednesday, July 2, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $10 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are retuned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, June 12, 1952.

Bids: June 26, 1952

Building #141

THE PORT OF NEW YORK AUTHORITY
STEEL ROOF DECKING AND SIDING MATERIALS FOR BUILDING NO. 141, PORT NEWARK, N. J.
PROPOSAL NO. 816

Sealed proposals for furnishing steel roof decking and siding for Building No. 141, at Port Newark, New Jersey, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 1402, 111-8th Ave., New York 11, until 11 A.M. (EDST) Thursday, June 26, 1952, at which time and place bids will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, June 12, 1952.

OFFICIAL PROPOSALS

Bids: July 1, 1952

Construction of Quinapoxet Dam and Appurtenant Work

CITY OF WORCESTER
DEPARTMENT OF PUBLIC WORKS

Sealed bids for constructing Quinapoxet Dam and appurtenant work will be received at the office of City Manager, Room 306, City Hall, Worcester 8, Massachusetts, until 11:00 a.m., Eastern Daylight Time on July 1, 1952, and at that time publicly opened and read. The work includes about 100,000 cu. yd. of earth embankment and 4,000 cu. yd. of concrete.

Drawings and contract documents may be examined at the Office of the Commissioner of Public Works, 20 East Worcester Street, Worcester, Massachusetts, and examined and obtained at the office of Metcalf & Eddy, Engineers, 1300 Statler Building, Boston, Massachusetts. Fifty dollar deposit required. A surety company bond securing faithful performance and covering the provisions of General Laws Chapter 149-S29 will be required. Proposal guarantee of a $40,000 certified check will be required with the bid. Minimum wage rates under C461 of Acts of 1935 have been determined. The Contractor will be bound by the applicable statutory provisions of law. The location of this work may be inspected. The City reserves the right to reject any or all bids. Mark envelopes: "Proposal for Constructing Quinapoxet Dam."

CITY OF WORCESTER
By Earl R. Perry
Commissioner of Public Works

Bids: July 25, 1952

Toll System Equipment

The New York State Thruway Authority invites proposals for furnishing and installing equipment for the operation and control of a toll system on the New York State Thruway.

Full information on the control sytem is available and may be obtained from the office of the Authority, 119 Washington Ave., Albany 6, N. Y.

Each proposal should be enclosed in a sealed envelope and the words "Equipment for Toll System" should be shown, for identification, on the face of the envelope, and the sealed envelope should be directed to the Authority at the above address. Sealed proposals will be received until 10:00 A.M. daylight saving time, (New York State), on July 25, 1952, when they will be publicly opened and read.

The Authority reserves the right to reject any or all proposals.

B. D. TALLAMY
Chairman
N. Y. S. Thruway Authority

Bids: July 15, 1952

City of Chicago Invites Bids for Three (3) Sections of Tunnel Construction for Central District Filtration Plant, Chicago, Illinois

Sealed proposals on three (3) sections of tunnel construction will be received by the Department of Purchases, Contracts and Supplies until 11:00 A.M., Central Daylight Saving Time, July 15, 1952, at Room 401, City Hall, Chicago, Illinois, at which time and place all such proposals will be opened and read publicly.

Brief descriptions of the three tunnel sections are as follows:

Specifications No. 80.391-51-1, Section "A", furnish all labor and materials required for the construction of four (4) shafts in Filtration Plant site area 400 feet north, of Navy Pier and 500 feet east of Lake Shore Drive; one (1) 20-foot tunnel in rock, 1400 feet in length; three (3) 16-foot tunnels in rock approximately 11,400 feet in length and one (1) 16-foot tunnel in clay approximately 80 feet in length together with all other work appurtenant thereto.

Specifications No. 80.391-51-2, Section "B", furnish all labor and materials required for the construction of 14-foot work shaft, two (2) lengths of 16-foot tunnel in rock, with total length of approximately 14,300 feet, one extending southeasterly to connection with Tunnel Section "A" and the other extending northwesterly to connection with Tunnel Section "C", together with all other work appurtenant thereto.

Specifications No. 80.391-51-3, Section "C", furnish all labor and materials required for the construction at location from two (2) shafts in Park Area south of Wilson Avenue and east of Clarendon Avenue, two (2) 16-foot tunnels in rock, with total length of approximately 4700 feet; one (1) 12-foot tunnel in rock, 200 feet in length; one (1) 8-foot tunnel in clay approximately 246 feet in length and one (1) by-pass structure, together with all other work appurtenant thereto.

Bidders may bid on any one section, combination of sections or on all three (3) sections.

A proposal shall be accompanied by a bid deposit in cash, cashier's check, certified check or Comptroller's Certificate of monies owed the particular bidder in amounts as follows:

Section "A"—	$185,000.00
Section "B"—	145,000.00
Section "C"—	60,000.00
Total for Sections "A", "B", and "C"	390,000.00

Checks are to be drawn on some responsible bank located and doing business in the United States and are to be made payable to the Purchasing Agent, City of Chicago.

A deposit for plans and specifications of $50.00 is required for each section or $150.00 for all three sections. These deposits are returnable upon return of plans and specifications.

All communications and requests for plans and specifications should be addressed to the Purchasing Agent, Department of Purchases, Contracts and Supplies, Room 401, City Hall, Chicago 2, Illinois.

JOHN F. WARD,
Purchasing Agent.

Bids: July 8, 1952

Passenger Terminal Utilities & Paving

THE PORT OF NEW YORK AUTHORITY
NEWARK AIRPORT
CONTRACT NA-170.036

Sealed proposals for furnishing and installing utilities and paving for the Passenger Terminal at Newark Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111-8th Ave., New York 11, until 2:30 P.M. Tuesday, July 8, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $100 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

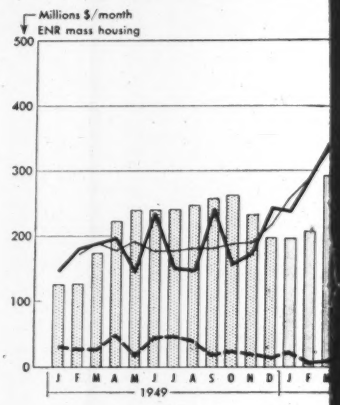
THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 12, 1952.

U. S. Government

Office of the District Engineer, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Aitkin Flood Diversion Channel, Mississippi River, near Aitkin, Minnesota, will be received in this office until 2:00 P.M., C.S.T., June 18, 1952, and then publicly opened. Further information upon application.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3733) will be received at Rock Springs, Wyoming, until June 26, 1952, for furnishing labor and materials for: Earthwork and structures, Means Canal, station 296+00 to station 319+50, and, Eden Canal, station 319+50 to station 665+40.37 and channel changes and wasteway, Eden Project, Wyoming. Location: Vicinity of Farson, Wyoming. Principal items are: Excavation common and rock, 617,000 cu.yds.; overhaul 50,000 mi.cu.yds.; furnishing and handling cement 2,100 barrels; furnishing and placing reinforcement bars 133,000 lbs.; furnishing and laying precast concrete pipe 782 lin.ft.; and other work. Completion time 450 days. For particulars, address Bureau of Reclamation, Rock Springs, Wyoming, or Building 53, Denver Federal Center, Denver, Colorado.

BUSINESS AND FINANCE



End controls,

The pressure is on for relaxation of Regulation X.

Hammering away at an all-time record pace for housing, (ENR, June 5, p. 123), homebuilders have suddenly run into a stone wall: Homes are getting harder to sell, according to an ENR survey.

Unable to make the down payments required under Regulation X, many potential home buyers are adopting a "wait-and-see" attitude, confident that the government, which has already ended Regulation W, will now relax Regulation X.

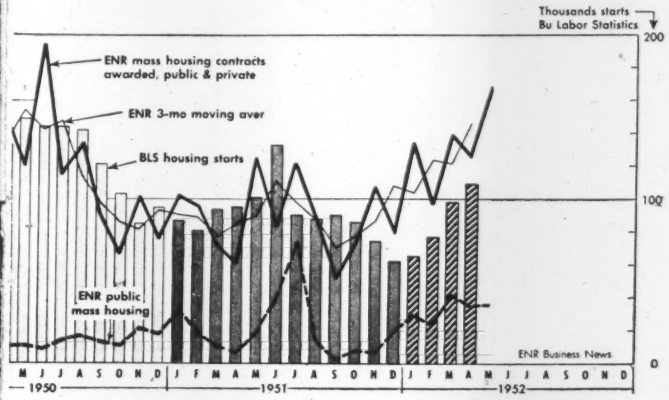
Other prospective home owners, who have been planning to buy a home in the $15,000-to $25,000-class, are turning to the low-cost market instead.

Builders, quick to spot the trend, are concentrating on homes in the $12,000-and-under bracket. Demand for lower priced homes seems to be strong in all sections of the country.

For example, in Memphis, Tennessee, builders find houses harder to sell in the market above $12,000—particularly in the $17,000-to $25,000-bracket.

Frank Steudlein, executive secretary of the Home Builders Association in Memphis, blames Regulation X. He said the sales snag in the higher priced homes has forced builders to construct smaller homes.

And, Memphis adds another point heard in many sections: bankers are reluctant to lend money at the prevailing rates on insured mortgages.


Thousands starts
Bu Labor Statistics
200
100
0
ENR mass housing contracts awarded, public & private
ENR 3-mo moving aver
BLS housing starts
ENR public mass housing
ENR Business News
M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1950
1951
1952

builders say, as home sales fall

A local banker reported that it is becoming "more difficult to sell homes above the $10,000-bracket," in Indianapolis. Builders, bankers and real estate men blamed high taxes, increased cost of living and Regulation X for the housing slump in Indianapolis.

In Raleigh, North Carolina, the market was even tighter. Contractors in the area have reportedly stopped almost all speculative building. The general trend there is to build only for a customer, either at a fixed contract price or cost-plus.

The price factor turns up again in the Hartford, Connecticut, area. Hartford, along with 17 surrounding communities has been designated as a critical housing area—but builders

ENR SURVEY shows rise in real estate ads as home builders face new sales resistance.

DRILLING MASONRY?

...you can do it faster and get more holes with TERMITE Drills

HERE'S WHY

1 Only TERMITES have a continuous spiral worm beginning at the grinding inserts . . . carries away material the instant it is pulverized!

2 Only TERMITES have "WICTU" inserts which drill faster and are specially designed to outlast conventional type carbide inserts.

GET TERMITE'S PULVERIZING ACTION FOR TRUER HOLES... AND QUICKER, QUIETER, LOWER-COST DRILLING
DIAMETERS FROM ¼" TO 5"
LENGTHS UP TO 36"

ORDER TODAY through your distributor

TERMITE
ROTARY MASONRY DRILLS
TERMITE DRILLS, INC.
96 N. Lotus Ave. Pasadena 8, California

"GUNITE"
for repairs and
new construction

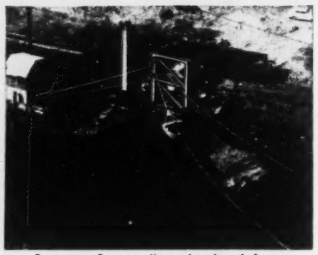
1 Dam repairs and reconstruction
2 Thin wall construction
3 Bunker and stack linings
4 Tunnels and pipe linings
5 Structural steel encasement
6 Prestressed tanks
7 Restoration defective masonry structures
8 High and low pressure grouting

phone or write us for . . .
estimates MU. 3-1973
Many Years Experience of
Pneumatic Mortar Work

LEWIS & McDOWELL INC.
GUNITE ENGINEERS & CONTRACTORS
285 MADISON AVE., NEW YORK CITY

More Yardage with Less Labor

Sauerman Slackline builds cofferdam across gorge on river.



Sauerman Scraper digs volcanic ash from hill and loads into cars.

How Sauerman Machines Cut Costs

With one man at the controls a Sauerman Scraper or Slackline Cableway can reach out 1,000 ft. or more and dig, haul and dump sand, gravel or any bulk material. Simple operation! Economical use of power!

A Sauerman machine can be installed to reach across a pit, pond, river or stockpile, or up to the top of a hill. It moves material rapidly anywhere within its wide radius. Flexible for any ground conditions. Costs only a few cents per cubic yard handled. Gas, electric or diesel.

★ *Write for Catalog of Sauerman Equipment for work you are interested in and let us counsel with you on your problems.*

SAUERMAN BROS., Inc.

532 SO. CLINTON ST. CHICAGO, ILLINOIS

Since 1922

GUNITE *Shot with air*

for CONSTRUCTION and MAINTENANCE

Experience That Counts
Write today for complete details of our services

INDIANA GUNITE & Construction Co., Inc.

226 NORTH ALABAMA STREET
INDIANAPOLIS 4
Indiana

PHOENIX BRIDGE COMPANY

Engineers—Fabricators
Erectors
Structural Steel
BRIDGES and BUILDINGS

General Office
and Shops
PHOENIXVILLE, PA.

Subsidiary—Barium Steel Corporation

Safe and economical solution to foundation problems...

FRANKI DISPLACEMENT CAISSONS

● The driving and concreting procedure followed in the installation of Franki Displacement Caissons results in very high compression of surrounding soil. This high soil compression added to the intrinsic strength of the Franki Displacement Caisson provides an unequalled bearing capacity.

It will pay you to investigate the advantages of the Franki Displacement Caisson. It has been used successfully in 36 countries under a wide variety of soil conditions. Typically, single caisson loads are 100 tons.

Write for information about the construction method, advantages, tests and typical installations of the Franki Displacement Caisson.

Excavated Franki Displacement Caisson. Enlarged base and 21" diameter shaft formed by ramming concrete into soil. Soil is displaced and compacted—not excavated.

FRANKI FOUNDATION COMPANY

436 Seventh Avenue Pittsburgh 19, Pa.

are finding it difficult to sell houses.

The Home Builders Association of Hartford County reported that out of a group of 300 houses in the $14,000-to-$25,000-bracket, all built within the last 12 months, 187 of the 300 houses are still unsold.

Although there has not been a drop in homebuilding in the Hartford area, many builders have changed their plans, are now building homes with $10,000-to-$12,500-price tags, instead of $18,000-to-$25,000.

There is a brighter side: the consensus in Pittsburgh is that the market for new homes is good enough to justify builder's plans to erect more units this year than last.

Virtually all of the builders surveyed in Pittsburgh said the market is especially good for homes under $12,000. But it is difficult to find prospects in that price range who can meet the required down payment.

Housing demand in Boston is holding close to the previous high level.

Pierre, South Dakota, contractors report that they are unable to meet the demand for houses in the $9,800-to-$12,500-bracket.

Builders, realtors and finance houses in Louisville, Kentucky, report that business is "pretty good" for medium and low-priced homes.

Sales of new houses are "fine" in Houston, Texas. Builders and real estate brokers reported that there are fewer unsold new houses in Houston now than there were five or six months ago. Prices are stable. But houses are harder to sell if they are in the $12,000-or-over bracket.

Except in defense housing areas, builders in the Seattle, Washington, region are finding it harder to sell houses. The builders who haven't already curtailed their building programs say they will have to do so soon unless sales improve. Some bankers take all the down payment they can get and will give FHA and GI mortgages only if a builder will take a few conventional mortgages. For example, a builder who wants to put up 50 houses will have to take 10 conventional mortgages to get 20 GI's and 20 FHA's.

Milwaukee area builders and real estate men feel there is still a big demand for homes in the area but generally say that sales have been lagging in recent weeks.

Builders say the sales lag is due to more "shopping" on the part of home buyers, the confusion caused by local strikes, and the belief by some prospective purchasers that prices are going to go down. But Milwaukee builders are not cutting back on their

output. They lost a month of building weather through a strike in the building trades and they are now trying to make up for lost time.

The sales slump has been more definite in Springfield, Illinois, where contractors have cut down sharply on speculative building, now wait until they have an order in hand before going ahead.

Chicago homebuilders and real estate men report that houses are harder to sell because of Regulation X and its required high down payments. Many prospective buyers are financially able to carry payments on a house, but do not have enough money saved to make the down payments required.

Builders in the Oklahoma City area report that homes in the $11,000-to-$20,000-class are moving slow. But houses selling for less than $6,000 are not greatly affected by Regulation X and are selling well.

Building inspectors in Trenton and its three adjoining townships in New Jersey report they are issuing almost 50% less building permits for private homes than they were at the same time in 1951. Classified advertising is at an all time high.

Two weeks ago, the Sunday edition of a St. Louis newspaper listed 110 columns of classified ads of houses for sale—and the number is still increasing. Builders say that many of these houses have been up for sale for months along with a huge backlog left over from fall and winter.

Nashville and Memphis, Tennessee, say the market "is slow and dull." FHA officials recently described the area as overbuilt. Entire subdivisions in Memphis and Nashville have not been sold.

L. E. Fite, in charge of construction for the L. E. Fite Co., San Antonio, Texas, said he has noticed in the last 60 days that it is getting harder to sell houses. Asked about future plans, he said: "We must gear our program in accordance with sales."

For more than a year, builders in Greater Miami have been having a rough time selling houses in the $12,500-to-$25,000-price bracket because of Regulation X.

Several merchant builders still have a number of houses in the $18,000-to-$25,000-bracket completed from 12 to 14 months ago.

Real estate brokers report the same condition. So do bankers.

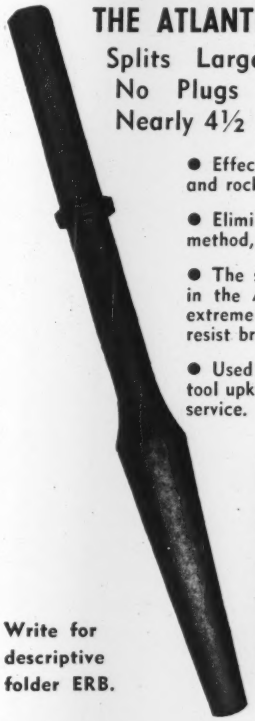
The Controlled Materials Plan and Regulation X caused a number of the larger builders in southeast Florida to turn to low-cost housing toward the end of last year—and there has

ATLANTIC Pneumatic TOOLS

Use with your standard power pavement equipment . . . .

THE ATLANTIC PNEUMATIC ROCK BREAKER

Splits Large Rocks and Boulders quickly
No Plugs and Feathers — No Explosives
Nearly 4½ times faster



- Effective quick action in removing stones, boulders and rocks from excavations and ditches.
- Eliminates the slow and costly plug and feather method, and the risky and troublesome use of explosives.
- The specially heat-treated Atlantic Tool Steel used in the Atlantic Pneumatic Rock Breaker gives it the extreme toughness to withstand the severest usage and resist breakage regardless of the hardness of the stone.
- Used with standard power pavement breakers. No tool upkeep. Toughter than any stone. A size for every service.

Write for descriptive folder ERB.

Specialists in Tool Steels for chisels, drills, blacksmiths tools and Alloy Steels for axles, bolts, pins, pistons and shafts.

Non-tempering tool steels for greater safety and speed.

ATLANTIC STEEL CORP. 1775 BROADWAY, N. Y. 19

ONLY PLASTEEL GIVES YOU THE PERMANENT PROTECTION OF MICA

Plasteel MICA makes the DIFFERENCE

ROOFING and SIDING

- Mica resists the weather
- Mica reflects solar rays
- Mica needs no paint
- Mica needs no repairs
- Mica adds extra protection, beauty, economy!

For complete details, attach this advertisement to your letterhead and Mail Today EN6-52

PLASTEEL PRODUCTS CORPORATION
WASHINGTON, PENNSYLVANIA
Offices in Principal Cities

MADSEN
DUST COLLECTOR UNITS
FOR ALL ASPHALT PLANTS

The MADSEN 160 portable Dust Collector Unit for 1000-lb. and 2000-lb. SPECIAL Asphalt Plants

MADSEN builds a complete line of Dust Collector Units in all sizes for plants ranging in capacities from 10 tons per hour to 250 tons per hour. These units are flexible in design to efficiently perform the various functions required in asphalt paving plant operation and dust abatement.
No other dust collector units give you all of these MADSEN advantages • . low first cost, complete portability (units may be wheel-equipped and rubber-tired if desired), compact square design (patent pending), low maintenance cost, low over-all operating height and extremely rugged construction.

Write for your copy of the MADSEN Dust Collector Catalog

MADSEN *Equipment that Serves* ®
MADSEN IRON WORKS, INC.
P. O. BOX 589 • HUNTINGTON PARK, CALIF.

FOUNDATION CONSTRUCTION
CAISSONS
SHAFTS
DRILLED AND UNDERREAMED
PIERS
SPECIAL DRILLING PROBLEMS
Wire or phone for a quotation on your next foundation job —
ANYWHERE IN THE WORLD
McKINNEY
DRILLING COMPANY
NACOGDOCHES, TEXAS
Phones: 1195-1053 • P. O. Box 190

Sound powered
TELEPHONES
NO CURRENT REQUIRED
Indoor and Outdoor Models
For permanent installation on industrial projects or temporary use on construction jobs. Minimum upkeep Selective or common ringing and semi-selective or common talking.
WRITE FOR CATALOG
HOSE-McCANN
TELEPHONE CO., INC.
761 THIRD AVENUE
BROOKLYN 32, N. Y.

been a boom in the low-cost field. Examples:

Florida Sun Deck Homes, Inc., is building 6,000 poured concrete one and two bedroom homes in a development some 25 miles south of Miami. Frank Vellanti, head of Sun Deck, is selling them at prices ranging from $5,450 to $7,250.

The Mackle Co., Inc., builders in Greater Miami, are building 1,057 two and three bedroom houses in their tropical estates subdivision, some five miles west of Miami. The two bedroom house is selling for $4,950 and the three bedroom model for $6,250. VA financing is used exclusively.

Contractors and others close to the real estate and building picture in southeast Florida don't foresee a sudden boom in home building if Regulation X is eased.

Such action, they feel, would result in a pickup in custom home building, but still not at the level maintained in the Greater Miami area in 1950 and 1951.

Home builders, however, are not complaining. The speculative builders have found that the low-cost housing market furnishes a strong demand and financing is easier to obtain than has been their experience in the higher price home market.

In Helena, Montana, contractors commented that older houses are selling for less than it would cost to replace them, and the housing market generally has faded because the town has lost some population as the defense effort stepped up employment in other areas which are more heavily industrialized.

Builders, lenders and realtors in Lincoln, Nebraska, feel that the demand for housing has now leveled off and is not much different than it was two months ago, or even a year ago. Builders say that Regulation X is hindering the sale of houses. Most agree that if Regulation X is modified or dropped, housing sales will pick up. Some contractors have shifted concentration into the lower priced field.

Real estate firms in the San Francisco area are convinced there are fewer buyers than there were a few months ago, and prices are not firm.

Houses up to $15,000 sell readily, but homes costing more than $15,000 run into buyer resistance.

A spokesman for the Bank of America said the bank is "willing to loan money on houses even at the present low interest rates required by law, but people don't have money for down payments and monthly pay-

ments because the houses are so expensive."

"If there were more houses in the $7,000-to-$9,000-bracket and people could pay about $700 down and $41 a month, there would be plenty of sales," the banker said.

On more expensive homes, builders and lenders agree that people seem to compromise. One summed it up by saying: "Those who want $25,000-homes can't meet the down payment, so they buy $18,000-homes. If Regulation X goes off, it will stimulate sales of higher priced homes, but there won't be a big rush."

Contractors and builders in Montgomery, Ala., have gone into the retail lot business. It happened this way:

The builders have been in the habit of buying lots in blocks of ten or more from developers and now—with sales down—they have lots of lots on hand. However, individuals who cannot yet meet the requirements of the one-third payment for a package deal are turning around and buying the lots. Meanwhile, the same individuals have launched a saving campaign to get up the required down payment.

Newspapers in Harrisburg, Pa., are running as much as 15% more lineage, listing houses for sale, than a year ago. The ads not only list asking prices but some are asking for offers.

Builders in the area are reporting more dickering on prices, and more sales resistance, but so far have not changed their plans to meet the trend.

Last October, Malone & Malone, builders of medium and high priced homes in Dallas, Tex. for twenty years, got stuck badly. A $45,000-house didn't move for almost half a year, and they sacrificed a $42,500-house for $38,000 after six months of waiting. So they switched to low-price homes.

In the same Texas City, R. B. Alger, president of the Alger Development Co. said sales of building plots on a tract with "every advantage" are at a standstill. Many builders are finishing up work, but few are starting, he said.

Over the past 60 days, house sales in Detroit have become stickier by the week. This has happened during the best sales period of the year—March through May. June through August are generally regarded as among the worst months, so with sales off considerable, there's nothing cheery about the outlook, as far as builders and real estate men are concerned.

There's quite a difference between current asking and sales prices. A representative of the largest realty association in town says that not too many weeks ago, asking prices of $15,000 were resulting in sales of around $14,500. Now the $15,000 asking brings in $14,000.

Another survey of 96 homes showed an average listing of $11,260, and an average price of $10,900.

Demand for new home construction in Baltimore continues heavy. But selling has become progressively harder because of Regulation X and comparison buying by prospective purchasers.

Wrapped up in one package, the reports from builders, realtors and lenders all over the country agree on this:

1. There is still a big demand for new housing.

2. Some people are not buying homes now because they do not have the down payments required under Regulation X, or because they feel that prices of homes will come down.

3. Builders can still maintain their volume—and their profits—by concentrating in the low-cost home field.

"THAT'S REALLY THE WAY TO HANDLE CONCRETE"

says L. G. (Bud) Waigand, Project Manager, Peter Kiewit Sons Co.

Two men ran this Noble batch plant with 28S Koehring mixer

How would you haul and place 16,000 yards of concrete on a big water reservoir job, with pours scattered all over . . . and with a tight schedule?

Peter Kiewit picked two 3-yard Dumpcretes, mounted on light, short-wheelbase Chevrolet trucks for their U. S. Bureau of Reclamation job near Salt Lake City.

"We liked the Dumpcretes because they're fast," says Mr. Waigand, "and because they place equally well into forms, buckets or collecting hoppers. They're rugged too, and cause little downtime."

For facts on 2, 3, and 4-yard Dumpcretes write today.

MAXON DUMPCRETE

Fastest from plant to pour

Manufacturing Division
MAXON CONSTRUCTION CO., INC.
624 Talbott Bldg., Dayton 2, Ohio

Send the following

☐ "Dumpcrete High-production Method"

☐ "12 Ways to Set Up for Central Mixing"

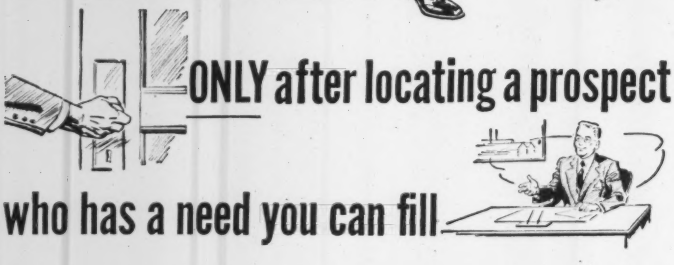
Name_____

Firm_____

Street_____

City_____ State_____

This sale can be made ONLY after locating a prospect who has a need you can fill



That all-important *first* step in every sale is the one Dodge Reports take for you! This 60-year-old construction-news service tells construction marketing men *who* and *where* their prospects are, *what* they're going to build and *when* they should start to sell them.

Dodge Reports cover all types of new construction in the 37 states East of the Rockies. They save valuable time for you and your salesmen . . . eliminate beating the bushes and chasing down rumors . . . Dodge Reports provide more opportunities for doing business than you can get in any other way . . . point out more new prospects coming into the market . . . show up more opportunities for profitable contacts among the people you already know.

This timely and vital information is mailed to Dodge users every day. Write today for free book.

DODGE REPORTS

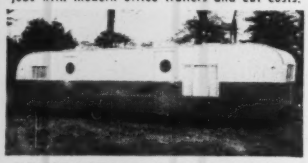
F.W. DODGE CORPORATION

Dept.ENR6,119 W. 40th St., New York 18, N. Y.

Timely, accurate, comprehensive construction news service

THE FIRST STEP IN EVERY SALE

Would you use 1925 construction equipment today? No. Why not change over and equip your jobs with modern office trailers and cut costs.



CONTRACTORS' OFFICE TRAILER

Models 24'—28'—35'
Price $2100. to $3500.
Birch finish, drafting table, 2 built-in desks with letter files & drawers, other conveniences. Write for pictures and plans.

TRAILER VILLAGE SALES, INC.
8642 Pulaski Highway, Baltimore 21, Md.
Phone: Essex 2233

WHOLESALE LUMBER

Southern and West Coast Lumber
Treated and Untreated

Specialists to the construction field
Also railroads and industrials

Contact Us for Prompt-Efficient Service and Delivery

L. U. WEST LUMBER COMPANY
Telephones LD126 and 23247
Box 1447 Montgomery, Alabama

Ideal for FOUNDATION TESTING

Longyear DIAMOND CORE DRILLS

Test your foundation sites for—
Dams, Bridges, Industrial Plants and Heavy Structures
...with compact, powerful, easy to move Longyear drills. Or, have your foundation testing, soil sampling, or grout hole drilling done rapidly and dependably by Longyear Contract Drilling Service.

For full information on Longyear drills or contract drilling service write today.

E. J. LONGYEAR COMPANY
1700 FOSHAY TOWER • MINNEAPOLIS, MINNESOTA, U. S. A.
DIAMOND CORE DRILLS • CONTRACT CORE DRILLING • SHAFT SINKING
GEOLOGICAL INVESTIGATIONS

Final contracts let for Oklahoma Turnpike

Final construction contracts for the Oklahoma Turnpike were let May 19 by the Oklahoma Turnpike Authority. The new work included 3.5 miles of grading and drainage, 2.3 miles of asphaltic-concrete paving and six bridges and totals to $2.5 million. All bids were above the engineers' estimates in amounts ranging from 5 to 35 percent.

The single bid received on 1.5 miles of grading and drainage through the Town of Sapulpa was so far above the engineers' estimate, $811,265 as against $529,764, that an award could not be made under a provision of the Turnpike Act limiting grading and drainage contracts to approximately half-a-million dollars.

To get around this difficulty without further delay the Turnpike Authority, in May 19, negotiated a contract for the work with another contractor at $647,714.

On May 1, the Turnpike Authority sold $7 million in 3.84% bonds to a syndicate of New York brokers. That brought to $38 million, the bonds which have been sold to finance the turnpike.

The Turnpike Authority also sold the concession privileges on the turnpike to the Phillips Petroleum Co., of Bartlesville, Ohio.

That company will spend $800,000 to build two filling stations with snack bars at each end of the turnpike and two filling stations with large restaurants at the mid-point. This property will revert to the authority after 25 years.

The Phillips Company will pay 2½¢ a gallon on gasoline sales, 15¢ per gallon on oil sales, and 5% on restaurant sales and on receipts from other services.

On July 8, the authority will take bids on the construction of toll booths at the ends and at four interchange points.

Ohio Turnpike sells $326 million in bonds

The Ohio Turnpike Commission, on June 4, accepted the offer of an investment syndicate to buy $326 million in 3¼% revenue bonds at $976 for each $1,000 bond.

The income is to be used to finance the 241-mile toll highway that the commission proposes to build across the northern part of the state as a continuation of the Pennsylvania Turnpike.

The cost of that project, exclusive

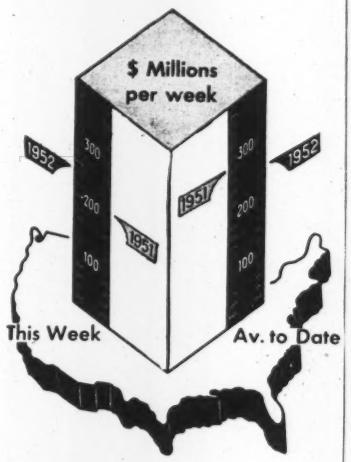
of financing charges and interest during construction, is estimated at $283.3 million.

Immediately following the sale of the bonds, the commission instituted a pre-arranged suit that was taken at once to the Ohio Supreme Court to test the constitutionality of the amended act setting up the Ohio Turnpike Commission.

It is hoped that the court will act within a few days on the suit started June 4, and the commission may be able to start construction of the turnpike late this year.

Activity This Week

As reported to ENR (in millions of dollars)

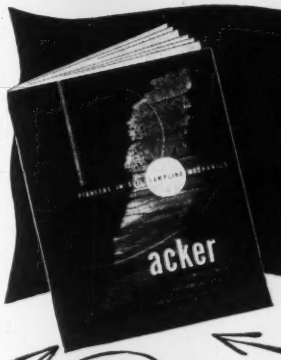


Contracts by type of work

	This Week	Cumulative 24 wks 1952	1951	% chge
Waterworks	$7.1	$110.1	$104.6	+5
Sewerage	7.8	110.7	152.2	−27
Bridges	3.8	169.9	136.6	+24
Highways	19.6	652.1	488.9	+33
Earthwork, waterways	10.5	252.6	260.8	−3
Buildings:				
Public	52.4	828.5	1,042.9	−21
Housg., pub.	6.3	424.9	261.1	+63
Housg., priv.	46.6	1,358.8	965.5	+41
Commercial	13.8	291.7	333.2	−12
Industrial	51.8	1,322.1	2,247.4	−41
Unclassified	24.2	590.5	765.5	−23
Total	**$243.9**	**$6,111.9**	**$6,758.7**	**−10**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost.	June	561.69	270.00	117.75
	May	557.11	267.80	116.79
Bldg. cost.	June	412.50	222.98	117.26
	May	410.30	221.80	116.65
Volume	May	554	225	160



FREE! SOIL SAMPLING CATALOG

OVER 80 ILLUSTRATIONS

33 YEARS IN THE MAKING

This complete, instructive collection of information about soil sampling in all subsurface conditions, shallow or deep, with hand or power driven tools, is yours for the asking. Modern sampling techniques are discussed with recommendations as to tools and accessories best suited for fast, accurate, economical sampling.

Use the coupon or write for Bulletin 25.

REMEMBER, Acker also makes a complete line of Diamond and Shot Core Drills, Drilling accessories and equipment.

★

ACKER DRILL COMPANY, INC.
Scranton, Pa.
Pioneers in Soil Sampling

Send me my free copy of Bulletin 25, ENR

Name _____ Title _____

Firm _____

Street _____

City _____ State _____

FLINT

STEEL

FABRICATED - ERECTED from start to finish —

Flint can furnish your requirements for

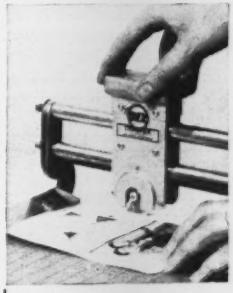
- STRUCTURAL
- REINFORCING
- GALVANIZED
- PLATE

FLINT STEEL CORPORATION
P. O. Box 1289
TULSA OKLAHOMA

In Step with Modern Methods!

DEX *Safety* TRIMMER

A well-designed paper trimmer for engineers, architects, blue printers, photographers, aerial map makers and others.



SAFE
QUICK
ACCURATE
LIGHT
STAYS SHARP

6 Sizes:
12 x 12
18 x 18
24 x 24
30 x 24
36 x 8
42 x 8

Clean-shearing cutter wheel works in either direction. Cuts straight and fast with less effort. Will pay for itself in time saved.

Write for Descriptive Literature—Prices

DEX *Safety* TRIMMER
P. O. Box 1224 Los Altos, Calif.

INVESTIGATE ECONOMY OF

- Drilled Piling
- Caissons

CAISSON SHAFT SIZES 16" to 84"

BELL SIZES 2' TO 12'

CASEY & CASE

Foundation Co.

Penobscot Building
Detroit 26, Mich.

Phone:

DETROIT ..... WOodward 2-1389
CHICAGO ..... CEntral 6-6579
LOS ANGELES ..... UNderhill 0-1201
SAN FRANCISCO ..... LAndscape 6-8622

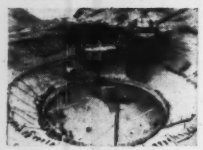
Write for Bulletin

WET JOBS

Whether it's

HEAVY CONSTRUCTION

BUILDINGS



SEWERAGE

or any other type of wet work

For "quick-dry"... specify ...

GRIFFIN

WELLPOINT CORP.

881 East 141st Street, New York 54, N. Y.
Hammond, Ind. Houston, Tex. Jacksonville, Fla.

UNIT PRICES

Sewer pipe bid three ways on Fairfax, Va. project

Concrete pipe brought the low bid received by the Sanitary District #1, Fairfax, Va. for 53,000-ft of 8-in and 10-in sewer pipe in the Sleepy Hollow and Falls Church Area. Massey Engineers, of Fairfax, the consultants, estimated the cost of the project to be $286,701. Payne & Oliver Co.'s bid of $338,960 was 7% below the second bidder and 1% below their own bid for vitrified clay pipe and 13% below their own bid on asbestos cement pipe.

Unit prices are reported here for all eight schedules and include furnishing, laying and jointing sewer pipe.

The schedule of hourly wage rates is back hoe operator, $2.75; bulldozer operator, $2.10; pipelayer, $2.25; truck driver, $1.50; assistant pipelayer, $1.60; and unskilled labor, $1.30.

Bidders include:

1C	Payne & Oliver, Baileys Cross Rds, Va	$338,960
2	Nance & Vivadelli, Arlington, Va	364,655

Bids: 5-15-52

Tripp Run Area—Sub-Trunk Sewer—Schedule 1

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
10" sewer 0'—6'	lf	437	$2 20	$1 70
6'—8'	lf	503	2 20	2 40
8'—10'	lf	269	2 20	3 05
8" sewer 0'—6'	lf	3,226	2 25	1 35
6'—8'	lf	9,449	2 25	1 60
8'—10'	lf	12,363	2 25	2 00
10'—12'	lf	426	3 63	3 55
12'—14'	lf	176	4 20	6 60
Conc pipe extra strength 10" [1]	lf	1,209	4 69	3 95
standard strength 8"	lf	25,640	2 71	3 80
Vitr clay pipe extra strength 10"	lf	1,209	5 04	4 05
standard strength 8"	lf	25,640	2 72	3 90
Asbestos cmt pipe, cls. 1 10"	lf	1,209	5 50	no bid
8"	lf	25,640	3 65	no bid
Rock exc	cy	150	15 00	15 00
Sheet, brac & shor [2]	Mfbm	10	140 00	70 00
Conc cradle 8" pipe	lf	835	1 20	1 35
Conc encasement 8" pipe	lf	185	4 50	4 75
10" pipe	lf	100	5 50	5 25
Manholes, 119	vf	961	17 50	18 00
Manhole drop connect, 9 for 8"	vf	30	20 00	15 00
Gravel refill [3]	cy		7 00	7 00

Tripps Run Area—Outfall Sewer—Schedule 2

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
8" sewer 0'—6'	lf	430	2.15	1.40
6'—8'	lf	1,185	2.15	1.40
8'—10'	lf	2,415	2.15	1.75
10'—12'	lf	580	3.53	2.25
12'—14'	lf	165	4.10	3.55
14'—16'	lf	55	4.10	6.60
Conc pipe, stnd str 8"	lf	4,830	2.61	3.90
Vitr clay pipe, stnd str 8"	lf	4,830	2.82	4.00
Asbestos cmt pipe Cls. 1 8"	lf	4,830	3.65	no bid
Rock excavation	cy	100	15.00	15.00
Sheet, brac & shor	Mfbm	10	140.00	70.00
Conc cradle 8" pipe	lf	550	1.20	1.35
Conc encasement 8" pipe	lf	115	4.50	4.75
Manholes, 22	vf	191	17.50	18.00

Tripps Run Area—Collecting Sewers—Schedule 3

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
8" sewer 0'—6'	lf	220	2.40	1.60
6'—8'	lf	1,013	2.40	2.35
8'—10'	lf	115	2.40	3.05
Conc pipe, stnd strength 8"	lf	1,348	3.43	3.25
Vitr clay pipe, stnd strength 8"	lf	1,348	3.54	3.35
Asbestos cmt pipe cls. 1, 8"	lf	1,348	4.37	no bid
Rock excavation	cy	25	15.00	15.00
Sheet, brac & shor	Mfbm	1	140.00	70.00
Conc cradle 8" pipe	lf	100	1.20	1.35
Conc encasement 8" pipe	lf	50	4.50	4.75
Manholes, 8	vf	55	17.50	18.00

Knollwood & Staffordale Subdivisions—Schedule 4

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
8" sewer 0'—6'	lf	168	1 82	1 25
6'—8'	lf	1,936	1 82	1 50
8'—10'	lf	2,288	1 82	1 60
10'—12'	lf	312	3 05	2 25
Conc pipe stnd strength 8"	lf	4,704	3 07	3 70
Vitr clay pipe stnd strength 8"	lf	4,704	3 18	3 80
Asbestos cmt pipe cls. 1 8"	lf	4,704	4 01	no bid
Rock exc	cy	100	15 00	15 00
Sheet, brac & shor	Mfbm	4	140 00	70 00
Conc cradle 8" pipe	lf	130	1 20	1 35
Conc encasement 8" pipe	lf	100	4 50	4 75
Manholes, 18	vf	152	17 50	18 00
Manhole drop connect, 1	vf	2	20 00	15 00

Valley Brook Subdivision & Beech Tree Lane—Schedule 5

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
10" sewer 0'—6'	lf	150	1 05	1 55
6'—8'	lf	256	1 05	1 75
8'—10'	lf	1,175	1 05	2 25
8" sewer 0'—6'	lf	565	1 75	1 30
6'—8'	lf	1,178	1 75	1 50
8'—10'	lf	570	1 75	1 85
Conc pipe extra strength 10"	lf	1,581	3 16	2 95
stnd strength 8"	lf	2,313	3 03	2 20
Vitr clay pipe extra str 10"	lf	1,581	3 51	4 20
stnd strength 8"	lf	2,313	3 14	2 30
Asbestos cmt pipe cls. 1 10"	lf	1,581	3 97	no bid
8"	lf	2,313	3 97	no bid
Rock exc	cy	100	15 00	15 00
Sheet brac & shor	Mfbm	2	140 00	70 00
Conc cradle 8" pipe	lf	100	1 20	1 35
Conc encasement 8" pipe	lf	100	4 50	4 75
Manholes, 14	vf	109	17 50	18 00

Holmes Run Park & Rich-E-Land Subdivisions—Schedule 6

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
8" sewer 0'—6'	lf	1,090	2 30	1 50
6'—8'	lf	4,018	2 30	1 70
8'—10'	lf	2,539	2 30	1 85
10'—12'	lf	470	3 53	2 80
12'—14'	lf	20	4 10	6 60
Conc pipe stnd strength 8"	lf	8,137	3 27	4 30
Vitr clay pipe stnd str 8"	lf	8,137	3 38	4 40
Asbestos cmt pipe cls. 1 8"	lf	8,137	4 21	no bid
Rock exc	cy	200	15 00	15 00
Sheet, brac & shor	Mfbm	10	140 00	70 00
Conc cradle 8" pipe	lf	515	1 20	1 35
Conc encasement 8" pipe	lf	200	4 50	4 75
Manholes, 38	vf	313	17 50	18 00
Manhole drop connect, 8" pipe	vf	16	20 00	20 00

Holmes Run Area—Malbrook Subdivision—Schedule 7

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
10" sewer 0'—6'	lf	846	1 80	2 00
6'—8'	lf	405	1 80	2 00
8" sewer 0'—6'	lf	149	2 35	1 50
6'—8'	lf	1,110	2 35	1 50
8'—10'	lf	813	2 35	1 85
Conc pipe extra strength 10"	lf	902	4 68	4 00
stnd strength 10"	lf	349	4 36	3 65
stnd strength 8"	lf	2,072	2 81	3 35
Vitr clay pipe extra str 10"	lf	902	5 03	4 15
stnd strength 10"	lf	349	4 57	3 75
stnd strength 8"	lf	2,072	2 92	3 45
Asbestos cmt pipe cls. 1 10"	lf	1,251	5 49	no bid
8"	lf	2,072	3 75	no bid
Rock exc	cy	50	15 00	15 00
Sheet, brac & shor	Mfbm	2	140 00	70 00
Conc cradle 8" pipe	lf	100	1 20	1 35
Conc encasement 8" pipe	lf	100	4 50	4 75
10" pipe	lf	350	5 50	5 75
Manholes, 12	vf	87	17 50	18 00

Falls Church Area—Devonshire Gardens Subdivision—Schedule 8

Items	Unit	Quantity	Unit Prices 1 C	2
Trench exc, pipe fndn & bkfill				
8" sewer 0'—6'	lf	65	2 23	2 80
6'—8'	lf	849	2 23	3 55
8'—10'	lf	40	2 23	4 70
Conc pipe, stnd str 8"	lf	954	2 71	3 15
Vitr clay pipe stnd str 8"	lf	954	2 82	3 25
Asbestos Cmt pipe Cls. 1 8"	lf	954	3 65	no bid
Rock exc	cy	5	15 00	15 00
Sheet, brac & shor	Mfbm	1	140 00	70 00
Conc cradle 8" pipe	lf	50	1 20	1 50
Conc encasement 8" pipe	lf	25	4 50	4 75
Manholes, 4	vf	31	17 50	18 00

[1] All unit prices of sewer pipe include laying & jointing
[2] Sheeting, bracing & shoring ordered left in place
[3] Gravel refill was bid $7.00 on each schedule

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.
ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 18, Massachusetts
STREETS AND ROADS
June 16, Connecticut June 18, 24, Massachusetts
June 18, Rhode Island

BIDS ASKED—BUILDINGS

▲ Conn., Hartford—HOTEL—B.A. About 7/1—Hotel Statler Co., Inc., 7 Ave. and 33 St., New York, N. Y., hotel, Pearl and Ford Sts. $5,000,000. CD 4/8.

HEAVY CONSTRUCTION

SOON LETS CONTRACT—BUILDINGS

▲ MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
A. V. Taurasi Co., Inc., 139 Jacques St., Somerville, Mass. LB, $2,780,313, est. $2,700,000. hy. and bridge constr. FI 62 (7), Newbury-West Newbury-Newburyport. Bids June 3. CD 5/14.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Frankini Constr. Co., Inc., 26 Mystic Ave., Medford, Mass. CA $1,419,342. superstructure 28 BUILDINGS, Willis Ave., Proj. PHA 15-1, South Medford, MEDFORD, MASS. Medford Housing Auth., 311 City Hall, Medford, Mass. CD 5/19, under LB.

▲ Stone & Webster Corp., 49 Federal St., Boston, Mass., CA, $14,000,000, design and construct POWER PLANT, in Laurel Section between River Rd. and Connecticut River, MIDDLETOWN, CONN. Hartford Electric Light Co., 266 Pearl St., Hartford, Conn. CD 5/26.

▲ The Wadhams & May Co., 15 Lewis St., Hartford, Conn., LB, $1,475,462, YMCA BLDG., High St., NEW BRITAIN, CONN. Young Mens Christian Assn., 6 Court St., New Britain, Conn. Bids May 27. CD 4/24.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 24, New Jersey June 26, New York
STREETS AND ROADS
June 17, New Jersey June 20, 26, New York
June 25, Delaware June 27, Pennsylvania

BIDS ASKED—BUILDINGS

▲ Md., Towson—SCHOOL, etc.—B.A. 6/23—Immaculate Conception Parish, Baltimore and Wares Aves., brick, concrete, steel Towson Catholic High School and Convent, addns. $1,748,300. Plans deposit $50. Gaudreau & Gaudreau, 330 N. Charles St., Baltimore, archts. J. L. Faisant & Assoc., 21 W. 25 St., Baltimore, struct. engrs. Egli & Gompt, Inc., 1019 N. Calvert St. Baltimore, mech. engrs. CD 3/26.

HEAVY CONSTRUCTION

SOON LETS CONTRACT—BUILDINGS

▲ Booth & Flynn Co., 1942 Forbes St., Pittsburgh 19, Pa., CA. $1,608,570, Contr. 417, outlet works, etc. on East Delaware Tunnel of the Delaware Aqueduct, in town of Neversink, NEW YORK, N. Y. Bd. Water Supply, 120 Wall St., New York, N. Y. Bids Apr. 29. CD 5/2, under LB.

▲ NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., Trenton,
Eastern Engineering Co., 4 N. North Carolina St., Atlantic City, LB, $1,146,759, grading 2.285 mi. Route 44 Sect. 16 from Repaupo Road to Route S-44 in Logan Twp., Fed. Proj. F-122 (9), Gloucester Co.;
Union Building & Constr. Corp., 631 Main St., Passaic, N. J., LB, $712,027, paving 1.78 mi. Route 4 Parkway Sect. 9E from Galluping Hill Rd. to Route 29 in Borough of Kenilworth and Twp. of Union, Fed. Proj. U-188 (2), Union Co. Bids May 27. CD 5/8.

▲ † Gahagan Constr. Corp., 90 Broad St., New York, N. Y. LB $1,117,350, dredging Schuylkill River between Phila. PENNSYLVANIA, and Norristown, Montgomery Co., NEW JERSEY. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids May 28. CD 4/25.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Birchwood Park Homes, c/o Stanley Klein, archt., 89-31, 161 St., Jamaica, N. Y. Owner Builds. $3,000,000. 275 HOMES on 72-acres bounded by North Shore Parkway, Jericho Turnpike and Hiliside Ave., EAST WILLISTON, N. Y.

▲ Gerace & Castagna, Inc., 155-10 Jamaica Ave., Jamaica, N. Y., LB $11,615,143, general constr.;
Astrove Plumbing & Heating Corp., 213 E. 27 St., New York 16, N. Y., LB $1,555,240, plumbing;
Raisler Corp., 129 Amsterdam Ave., New York 23, N. Y., LB $1,505,920, heating;
Fischbach & Moore, Inc., 226 E. 41 St., New York 17, N. Y., CA $1,744,800, electrical work for construction of General HOSPITAL and Superintendents' HOUSES and GARAGES at Pelham Parkway, South and Eastchester Rd., Bronx Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids May 28. CD 5/12.

▲ White Constr. Co., 95 Madison Ave., New York 16, N. Y. CA. $2,500,000. 4 story OFFICE, PEARL RIVER, N. Y. Lederle Laboratories, Div. American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y. Eggers & Higgins, 100 W. 42 St., New York 17, N. Y., archts.

▲ Birchwood Gardens Homes, c/o Stanley H. Klein, archt., 89-31, 161 St., Jamaica, N. Y. Owner Builds. $6,000,000. 545 HOUSES on 122 acre site on Hempstead Turnpike east of Wantagh Parkway, PLAINEDGE-WANTAGH, N. Y.

▲ Berry Hill Estates Homes, c/o John W. Burton, archt., 163-18 Jamaica Ave., Jamaica, N. Y. Owner

★ The WORLD'S LARGEST Building Job

NEEDS CONSTRUCTION ENGINEERS

—qualified by experience for responsible field positions on the BILLION DOLLAR Savannah River Plant.

★ DU PONT

—is building this huge project for the U. S. Atomic Energy Commission near Augusta, Georgia.

For The Engineer Experienced in Building Construction, We Offer

★ A CHALLENGING POSITION
★ 54 HR. WORK WEEK WITH OVERTIME ALLOWANCE
★ AN OPPORTUNITY TO ADD A GREAT EXPERIENCE TO YOUR PROFESSIONAL CAREER

Fill In Your:
NAME _____
ADDRESS _____
CITY _____

• For Details, Please Clip Coupon & Mail to:
E. I. DU PONT DE NEMOURS & CO., Inc.
CONSTRUCTION RECRUITMENT SECTION
P. O. BOX 117 AUGUSTA, GA.

FOR Better INSTALLATION

of corrugated steel, aluminum
or protected metal roofing and siding...

GO NELWELD!

Simplicity of the Nelweld topside method permits faster, production-line installation of corrugated metal roofing and siding. No interior scaffolding required. Provides strong, neat, watertight fastening.

● You build for *permanence, trim appearance* and *low maintenance cost* when the NELWELD topside method is used to install industrial corrugated steel, aluminum or protected metal roofing and siding.

Fastening is stronger because Nelson Rivweld studs, end-welded to purlins or girts, become an *integral part* of the structure. There are no exposed fasteners inside the building, resulting in neat appearance and easier painting maintenance.

Sheeting contractors prefer this proved method because it's at least 30 per cent faster than other fastening systems . . . eliminates the need for interior scaffolding . . . boosts employee morale because the method is easier and safer.

Write today for complete information and an actual demonstration sample of the Rivweld method.

Nelson Rivweld studs are distributed by: United States Steel Supply — Southern States Iron Roofing Co.— Reynolds Metals Co.—Aluminum Company of America.

Fasten it Better...at Less Cost, with NELWELD

NELSON STUD WELDING

DIVISION OF GREGORY INDUSTRIES, INC., LORAIN, OHIO

Builds. $1,000,000. 75 HOUSES on tract on Berry Hill Rd. SYOSSET, N. Y.

▲ † **Tully & Di Napoli & Gull Constr. Co.,** 33-15 Lawrence St., Flushing, N. Y., CA, $1,418,250, constr. hardstandings at Raritan Arsenal, METUCHEN, N. J. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Mar. 27. CD 2/28.

▲ **Ditman & Jackson, Inc.,** Manoa, Pa. Separate Contracts. Approx. $3,000,000. RESIDENTIAL development, Brookthorp Hills, BROOMALL, PA.

▲ **Stofflet & Tillotson,** 2043 Eastburn Ave., Phila., Pa CA. $1,454,700. Delaware Terrace HOUSING, EASTON PA. Easton Housing Auth., Easton, Pa. Bids Apr. 26 CD 5/8, under LB.

▲ **Brookhaven Corp.,** 160 Long Lane, Upper Darby, Pa. Separate Contracts. Approx. $1,600,000. RESIDENTIAL DEVELOPMENT, Neild Rd., etc., SPRINGFIELD, PA.

▲† **Merritt-Chapman & Scott Corp.,** 17 Battery Pl., New York, N. Y. CA. $16,353,282. 19 BUILDINGS, utilities and site imprvs., TOBYHANNA, PA. U. S. Engs., 121 N. Broad St., Phila., Pa. Bids May 23. CD 6/2, under LB.

▲ **Cedar Hill Constr. Co.,** 14 and Bangor St. S.E., Wash., D. C. Owner Builds. $1,050,000, APARTMENT, 14, 15 and Bangor and High Sts. S.E., WASH., D. C. H. R. Robinson, 1927 11 St. N.W., Wash., D. C., archt.

▲ **Charles E. Smith,** 805 15 St. N.W., Wash., D. C. Owner Builds. $1,000,000, APARTMENT, 3850 Tunlaw Rd. N.W., WASH., D. C. Santmeyer & Thomen, 2209 L St. N.W., Wash., D. C., archts.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

June 20, Kentucky, Tennessee — June 25, Louisiana

STREETS AND ROADS

June 20, Kentucky, Tennessee — June 25, Louisiana

BIDS ASKED—BUILDINGS

▲ **Miss., Meridian**—PLANT—B.A. 6/18—City, City Hall, mfg. plant to be leased and operated by W. S. Dickey Clay Mfg. Co., Commerce Trust Bldg., Kansas City, Mo. $1,650,000. CD 4/2.

▲ **Tenn., Memphis**—WAREHOUSE—B.A. 6/19—Orgill Bros., 36 W. Calhoun Ave., warehouse, $2,500,000. Extended date. Walk C. Jones-Walk C. Jones, Jr., 1215 Poplar St., archts. CD 5/1.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ † **Wise Contg. Co.,** 8 and Grace Sts., Richmond, Va., CA $1,448,000, Supply WAREHOUSE at Norfolk Naval Air Station, NOY 71287, Spec. 32856, NORFOLK, VA. P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va. Bids May 13. CD 5/28, under LB.

▲ **F. R. E. Clarson, Inc.,** 1521 W. Cass St., Tampa, Fla., CA $1,854,257, C.V.G. Hangar, NOY 71306, Cecil Field JACKSONVILLE, FLA. Dpt. Navy, Officer in Charge of Construction, Box 465, Naval Base, S. C. Bids May 27. CD 6/4, under LB.

▲ † **S. & L. Constr. Co.,** 3305 Lombardi Lane, Dallas, Tex. LB $1,431,506. 5 airmen's dormitories, mess and admin. bldgs., etc., Barksdale Air Force Base, Inv. 52-38, SHREVEPORT, LA. U. S. Eng., 300 Broadway, Little Rock, Ark. Bids May 27. CD 4/30.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Bernard Jaffe,** 464-D Painter St., Norfolk, Va., Owner Builds. $1,000,000. 100 RESIDENCES, NORFOLK, VA.

▲ **Stone & Webster Eng. Corp.,** 49 Federal St., Boston, Mass., CA. Approx. $1,000,000. Two 90,000 kw. POWER PLANT units, PORTSMOUTH, VA. Virginia Electric & Power Co., 7 and Franklin Sts., Richmond, Va. CD 2/9/51.

▲† **Coble Contg. & Engineering Co.,** Box 2040, Greensboro, N. C., LB $5,393,000. 12 quartermaster WAREHOUSES, NOY 70682, CAMP LEJEUNE, N. C. Dpt. Navy, Officer in Charge of Construction, Box 365, Naval Base, Charleston, S. C. Bids May 29. CD 5/7.

▲ **M. B. Kahn Constr. Co.,** 1113 Blossom St., Columbia, S. C., CA. $4,235,000, general constr.;
Miller Electric Co., 1420 Lady St., Columbia, S. C., CA $759,250, electrical work;
William H. Singleton Co., 1240 Jefferson Drives Hy., Arlington Va., and **W. H. Sullivan,** Greensboro, N. C., CA $1,946,636, mechanical work for teaching HOSPITAL, CHARLESTON, S. C. Medical College, State of South Carolina, Charleston, S. C. Grand total Bids May 15. CD 5/21, under LB.

▲ † **Claussen & Webster,** 1394 Gwinnett St., Augusta, Ga., LB $1,316,818, Items 1 through 40 less 2, 4 and 5; LB, $1,869,117, Items 1 through 40 incl. 2, 4 and 5, TROOP SPACES and facilities, Eng 09-133-52-62, CAMP GORDON, GA. U. S. Eng., Post Office Bldg., Savannah, Ga. Bids May 27. CD 5/2.

▲ **S. S. Jacobs Co.,** Hildebrandt Bldg., Jacksonville, Fla., CA, $4,000,000, 16 story OFFICE, JACKSONVILLE, FLA. Independent Life & Accident Insurance Co., Independent Life Bldg., Jacksonville, Fla.

▲ **Dobbins Bros.,** 218 N. 21 St., Birmingham, Ala., Owner Builds, $1,000,000. 150 RESIDENCES, addition to Green Springs Hills, BIRMINGHAM, ALA.

▲ **City**, Meridian, Miss., rejected bids Feb. 21. Factory for Textron, Inc., MERIDIAN, MISS. LB $7,025,000. CD 2/27, under LB.

▲ **R. P. Farnsworth & Co., Inc.**, 15151 S. Salcedo St., New Orleans, La. CA $1,188,000. CHURCH, NEW ORLEANS, LA. First Baptist Church, 3436 St. Charles Ave., New Orleans, La. CD 5/26, under LB.

▲ **C. H. Jimison Co.**, Huntington, W. Va. CA Approx. $1,250,000. 3 story, bsmnt., brick, rein.-con. HOSPITAL, Bellefonte, COVINGTON, KY. Roman Catholic Diocese Msgr. C. A. Toyle, dir., Covington, Ky. Bids Mar. 21, awarded May 19. CD 4/10, under LB.

▲ † **Consolidated Western Steel, Div. U. S. Steel Co.**, 5700 S. Eastern St., Los Angeles, Calif., **Foster & Creighton Co.**, American Natl. Bank Bldg., Nashville, Tenn., **Mechanical Contractors & Engineers, Inc.**, 445 Bishop St., Atlanta, Ga., and **Fischbach & Moore, Inc.**, 1st Natl. Bank Bldg., Atlanta, Ga., CA. $10,500,000, Cost-plus-fixed fee. Ram-jet TESTING addn. at Arnold Engineering Development Center, TULLAHOMA, TENN. U. S. Eng., Tullahoma, Tenn. CD 11/14/49.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 17, Wisconsin
STREETS AND ROADS
June 17, 24 Ohio June 17, Wisconsin

BIDS ASKED—BUILDINGS

▲† Ill., Great Lakes—SCHOOL—B.A. 6/20—Ninth Naval Dist., Great Lakes Training Station, 3 story, 150,000 sq. ft., technical service school, $2,750,000. Skidmore, Owings & Merrill, 100 W. Monroe St., Chicago, Zone 3, archts. CD 12/28.

SOON LETS CONTRACT—BUILDINGS

▲ O., Cincinnati—PLANT—Emery Industries, Inc., Carew Tower, soon lets contract Ell-shaped structure, 2 story, 40x60 ft., 1 story, 40x20 ft., and 40x80 ft. warehouse, 4900 Este Ave. $2,000,000. Frankenberger, Junker & Lensky, Vernon Pl., engrs.-archts. Erwin Emmer, c/o owner, dir. Eng. CD 5/5.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Healy Bros. Co.**, 336 W. 37 St., Chicago 9, Ill., CA $1,796,950, Upper Des Plaines Intercepting Sewer, City of Des Plaines and Elk and Main Twps. CHICAGO, ILL., Sanitary Dist. of Chicago, 910 S. Michigan St., Chicago 5, Ill. Awarded May 27. CD 9/20.

▲ **R. E. Dailey & Co.**, 9900 Northlawn St., Detroit, Mich. CA $3,391,000, est. $3,500,000. brick, steel, concrete water plant, filtration and water treatment facilities, FLINT, MICH. City, Water Dpt., Flint, Mich. CD 5/27, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Steinle-Wolfe, Inc.**, 128 N. Jefferson St., Fremont, O. CA. $2,156,247. 160-bed HOSPITAL in Tuscora Park on east side. BARBERTON, O. Bd. Trustees, Barberton Citizens Hospital Co., 324 Wooster Rd. N. Barberton, O. Bids May 28. CD 4/29.

▲ **Diamond Alkali Co.**, Union Commerce Bldg., Cleveland, O. Separate Contracts. $10,000,000. Chlorine PLANT, PAINESVILLE, O. Former contract cancelled. CD 3/19, under CA.

▲ **American Construction Co.**, 753 Washington St., Gary, Ind., Owner Builds, $3,500,000, 350 HOMES, EAST CHICAGO, IND. Awarded May 29.

▲ **Miller-Davis Co.**, 1029 Portage St., Kalamazoo, Mich. LB $1,284,500. general contract brick, steel, concrete tuberculosis HOSPITAL, KALAMAZOO, MICH. State, A. N. Langius, dir. State Bldg. Dpt., Lansing, Mich. Bids May 27. CD 5/22.

▲ **Robertson Brothers**, 4330 N. Woodward St., Royal Oak, Mich. Owner Builds. $1,800,000. eighty-nine 1 and 2 story, brick ranch HOMES. 1 acre sites, Adams and 17 Mile Rd., TROY, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
June 17, Iowa
STREETS AND DOORS
June 17, Iowa

BIDS ASKED—BUILDINGS

▲ Tex., Edinburg—COURT HOUSE—B. A. 7/1—Hidalgo Co., Court House, 70,000 sq. ft. masonry court house. $1,500,000. Extended date. R. Newell Waters, Weslaco, archt. F. J. Niven, 3908 Main St., Houston, engr. CD 5/12.

BUILDINGS

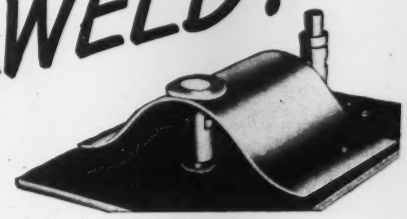
LOW BIDS AND CONTRACTS

▲ **Ben Franklin Refining Co.**, Ardmore, Okla., Force Account. $875,000. 5,000 bbl. POLYMERIZATION UNIT; $770,000, 6,500 bbl. CATALYTIC CRACKING UNIT; $550,000, GAS CONCENTRATION UNIT, proces-

FOR Cost Saving INSTALLATION

of corrugated steel, aluminum
or protected metal roofing and siding...

GO NELWELD!



■ A supply of Nelson Rivweld studs is as close to you as your telephone. Whether the quantity you need is small or large, call your nearest United States Steel Supply salesman. Your order . . . for Nelson Rivweld studs or for any other steel products in our inventory . . . will be promptly serviced.

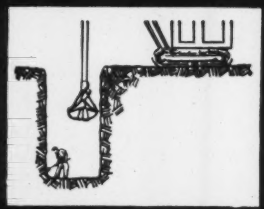
It will always pay you to contact your United States Steel Supply salesman whenever you have a problem of steel supply.

UNITED STATES STEEL SUPPLY DIVISION
UNITED STATES STEEL COMPANY
HEADQUARTERS: 208 So. LA SALLE ST., CHICAGO 4, ILL. · WAREHOUSES COAST-TO-COAST
BALTIMORE · BOSTON · CHICAGO · CLEVELAND · LOS ANGELES · MILWAUKEE · MOLINE, ILL. · NEWARK
PITTSBURGH · PORTLAND, ORE. · ST. LOUIS · TWIN CITY (ST. PAUL) · SAN FRANCISCO · SEATTLE
Sales Offices: INDIANAPOLIS · KANSAS CITY, MO. · PHILADELPHIA · PHOENIX
ROCKFORD, ILL. · SALT LAKE CITY · SOUTH BEND · TOLEDO · TULSA · YOUNGSTOWN

USS

UNITED STATES STEEL

DIFFICULT FOUNDATION WORK



- FOUNDATIONS
- CAISSONS
- UNDERPINNING
- SHEETING & BRACING
- PILING & SHEETING
- SHORING
- COFFERDAMS
- MOVING STRUCTURES
- SPECIAL SERVICES

Write for revised catalog.

FOUNDATIONS

Leaders in scientific design and construction of difficult foundation work, Spencer, White & Prentis provide engineering know-how that can be an important cost saving factor on any job, small or large, particularly when completion in a minimum construction period is vital.

SPENCER, WHITE & PRENTIS, INC.

10 East 40th Street, New York 16 • Hammond Bldg., Detroit, Mich.

In Canada

Spencer, White & Prentis of Canada, Ltd.

2052 St. Catherine's St., W • Montreal, Quebec

Hayward Buckets

Use this Class "E" Clam Shell Bucket for handling crushed stone, gravel, sand and other bulk materials.

THE HAYWARD CO., 48-50 Church St., N. Y.

Prompt, competent Contract Bond Service

ÆTNA CASUALTY AND SURETY COMPANY

Affiliated with

Ætna Life Insurance Company

HARTFORD 15, CONNECTICUT

BUILDERS

BUILDERS-PROVIDENCE

WATER and SEWAGE WORKS EQUIPMENT . . .

— for metering and controlling flow of liquids, air, dry materials. For Bulletins and complete information, address Builders-Providence, Inc. (Division of Builders Iron Foundry), Providence 1, Rhode Island.

BUILDERS—PROVIDENCE

sing capacity 7,000,000 cu. ft. daily. ARDMORE, OKLA. Grand total $2,195,000. CD 3/5.

▲ BMFP Constr. Co., Box 1595, Lubbock, Tex., CA, $1,119,000, CHURCH, EDUCATIONAL BLDG., LUBBOCK, TEX. First Methodist Church, Lubbock, Tex. Bids Apr. 15. CD 4/22, under LB.

▲† Lembke-Clough & King Co., 1719 N. 5 St., Albuquerque, N. M., LB $1,636,543, est. $500,000. 90,000 sq. ft., concrete frame, masonry panel TECHNICAL TRAINING BLDG., Sandia Base, Inv. No. [illegible] 29-005-52-65, ALBUQUERQUE, N. M. U. S. Eng., P. O. Box 1538, 2108 E. Central Ave., Albuquerque, N. M. Bids May 30.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

June 25, California

STREETS AND ROADS

June 25, 26 California

▲ Wash., Seattle—HANGAR—B.A. 6/19—Boeing Airplane Co., 7400 E. Marginal Way, 280x785 ft., steel, concrete hangar, $5,000,000. Plans deposit $25. J. W. Maloney Central Bldg., Seattle, Zone 4, archts. CD 5/29.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ † Peter Kiewit Sons Co., 442 Post St., San Francisco, Calif., LB $2,259,762, construct runway and taxiway, Naval Auxiliary Landing Field, NOY 72364, Spec. 32781. FALLON, NEV. P. Wks. Office, Twelfth Naval Dist., San Bruno, Calif. Bids May 28. CD 5/7.

▲ † Cherf Bros. Constr. Co. and Sandkay Contractors, Inc., Ephrata, Wash., LB $1,031,574, est. $1,052,219 earthwork, asph. membrane lining and structures for Area W 6-A Laterals, sublaterals and wasteways, west canal laterals, Columbia Basin Proj., Spec. DC 3710, WASHINGTON, Bureau Reclamation, Dpt. Interior, Bldg. 1A Denver Federal Center, Denver, Colo. Bids May 27. CD 5/22.

▲ Pacific Bridge Co., 333 Kearny St., San Francisco, Calif., CA $7,426,289, est. $7,872,760, construct Box Canyon hydro-dam, Ione, WASHINGTON, Pend Oreille Co. Public Utility Dist., Newport, Wash. Bids Mar. 27. CD 4/2, under LB.

▲ † McPhail Eng. Corp., 2904 Alaska St., Tacoma, Wash., CA, $2,512,042, Barracks at McChord Air Force Base Inv. 52-16, TACOMA, WASH. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids Apr. 15. CD 4/21, under LB.

▲ CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles.
Webb & White, 7220 Melrose Ave., Los Angeles, Calif., CA, $1,155,929, 2 railroad underpasses, etc. on Los Angeles River Freeway between Dominguez St. and Del Amo Blvd., Los Angeles Co. Bids May 15, awarded May 26. CD 5/21, under LB.

▲ CALIFORNIA—State Div. Hys., Sacramento.
Guy F. Atkinson Co., 10 W. Orange Ave., South San Francisco, Calif., CA, $2,986,961, portion of bridge road work etc. on Bayshore Freeway between 16 and 7 Sts., San Francisco Co. Bids May 14, awarded May 27. CD 5/19, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ E. C. Moller, 273 E. Walnut St., Pasadena, Calif., CA $1,279,000, 147 frame, stucco DWELLINGS, San Bernardino Rd., Alexander, Mills and McKinley Aves., POMONA, CALIF. Hacienda Gardens, c/o Harold B. Zook, archt., 2736 E. Walnut St., Pasadena, Calif.

▲ P. J. Walker Co., 3900 Whiteside Ave., Los Angeles, CALIF., LB, complete work, $2,756,572; Alt. $67,436 twelve 1 story wood frame WARD bldgs., Pacific Colony SPADRA, CALIF., State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids May 27. CD 4/24.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ † Rue Contg. Co., 1338 3rd Ave. N., Fargo, N. D., LB, $2,578,103, est. $3,032,204, 71x74 ft., steel-framed powerhouse on steel piles for Eklutna hydro-electric proj., ALASKA, Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids May 27.

CANADA

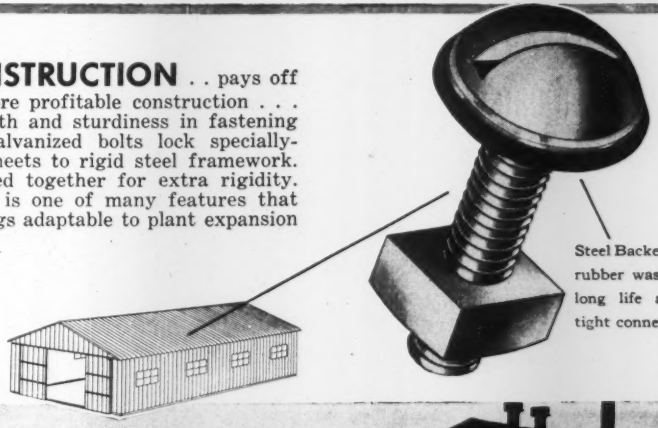
BIDS ASKED—BUILDINGS

▲ B. C., Trail—HOSPITAL—B.A. 6/27—Chairman, Trail-Tadanac Hospital Bd., Trail, 5 story, 250x300 ft., 150-bed acute general hospital, $1,500,000. Sharp & Thompson, Berwick, Pratt, 1553 Robson St., Vancouver, archts. CD 2/28/51.

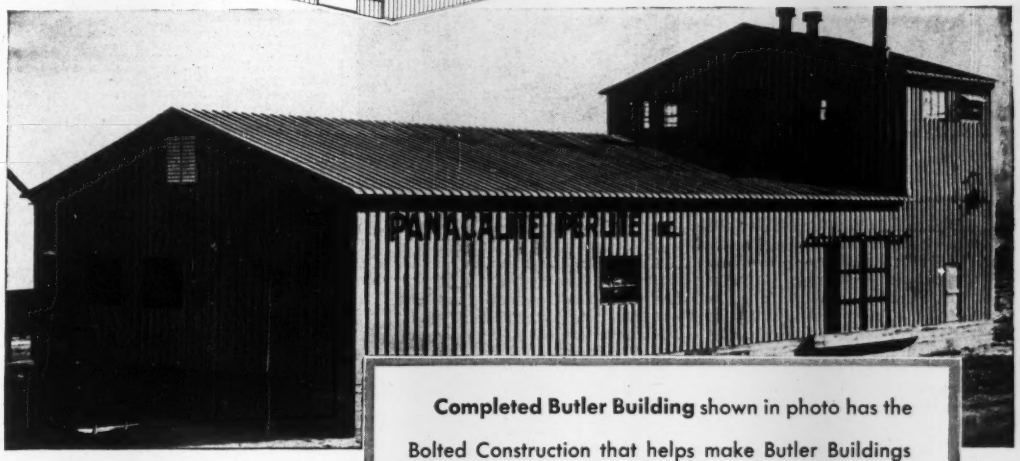
(Continued on page 130)

For Features that Pay Off... Buy Butler Buildings

BOLTED CONSTRUCTION . . pays off in faster, easier, more profitable construction . . . plus greatest strength and sturdiness in fastening metal to metal. Galvanized bolts lock specially-corrugated Butler sheets to rigid steel framework. Sheet laps are bolted together for extra rigidity. Bolted Construction is one of many features that make Butler Buildings adaptable to plant expansion or new construction.



Steel Backed Neoprene rubber washer assures long life and water-tight connection.



Completed Butler Building shown in photo has the Bolted Construction that helps make Butler Buildings extra strong — strong enough to withstand heavy industrial loads.

For more information about all the Butler features that can pay off for you, see your Butler dealer, or mail coupon today.

Built Better to Last Longer

BUTLER STEEL PRODUCTS

BUTLER MANUFACTURING COMPANY

KANSAS CITY, MO.
Galesburg, Ill.
Richmond, Calif.
Birmingham, Ala.
Minneapolis, Minn.

For prompt reply, address Dept. NR23 at office nearest you:

BUTLER MANUFACTURING COMPANY
7418 E. 13th St., Kansas City 3E, Missouri
918 6th Avenue, S.E., Minneapolis 14, Minn.
Richmond, Calif.

Tell me how I can profit with Butler Buildings.

Name_____

Firm_____

Address_____

City_____ Zone_____ State_____

digs 300 belled caissons

two per hour

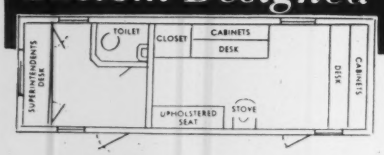
USING CALWELD EARTH DRILLS, a contractor completed 300 belled caissons for the building foundation of the new Bret Harte School in San Francisco—boring one every thirty minutes! This is just another example of speeded up production accomplished by contractors through using Calweld *Bucket Type* Earth Drills. Built in 3 models, they bore up to 84" diameter holes to a depth of 200 feet. Eliminate costly hand labor and danger of men having to work underground. Every operation of Calweld Earth Drills is mechanically performed. Interchangeable buckets permit boring in every soil condition. All controls are centered in single unit for easy operation. Built on skid frames for mounting on any truck from 1 to 2-ton or larger.

Write today for complete information.

CALIFORNIA WELDING & BLACKSMITH SHOP, INC.
7222 East Slauson Avenue, Los Angeles 22, California
EXPORT OFFICE: 50 Church Street, New York 7, N. Y.

CALWELD EARTH DRILLS

Custom Designed **FIELD OFFICE TRAILERS**



"The 12 trailers we have purchased from you in the last four years are invaluable to us."
Langenfelder & Son, Inc.
Baltimore, Maryland

These heavy duty field construction offices, which can be provided in three different lengths and with a variety of optional interior equipment, are ENGINEERED to provide maximum service under all conditions of terrain or locaton. Send for free booklet containing cut-away scale drawings, specifications and prices.

American Trailer Co., Inc.
4030 WISCONSIN AVE.
WASHINGTON 16, D. C.

Founded in 1936—House Trailer Headquarters in Our Nation's Capital for 16 Years.

(Continued from page 128)

Proposed Projects

STREETS AND ROADS

▲ O., Cincinnati—City, City Hall, imprv. Summit Rd. from Reading Rd. to corporation line and Sunset Ave. from Glenway to Queen City Aves.; divided expressway of two 24 ft. pavements from Queen City to Guerly Rd.; widening existing street to 36 ft. from Guerly to Glanway Rds., and new trunk sewer from Queen City to Guerly Rd. $1,400,000. T. J. Montgomery, city engr.

AIRPORTS

▲ Mo., St. Louis—TERMINAL—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 1, plans by Hellmuth, Yamasaki & Leinweber, Inc., International Office Bldg., 722 Chestnut St., Zone 1, airport terminal incl. loading fingers, service bldg., freight terminal, roadways, parking areas, landscaping, other facilities, Natural Bridge Rd., Lambert Field. $4,250,000, Landrum & Brown, 111 E. 4 St., Cincinnati, O., engrs. to study economic and space requirements.

▲† Okla., Oklahoma City—AIR BASE—U. S. Eng., Box 61, Tulsa, Zone 2, construct ultra high frequency air-ground radio facility station. Approx. $60,000; Air Force Base bldg. facilities, $1,100,000; pavements for runways, taxiways, etc. $1,542,000, at Tinker Air Force Base.

PUBLIC BUILDINGS

Calif., San Andreas—SCHOOLS—Calaveras Joint Union High School Dist., Calaveras and San Joaquin Counties, court house, San Andreas, voted $550,000 bonds Schools addns., alterations. Elmore G. Ernest, 561 Harding Way, Stockton, Calif., archts.

Kan., Kansas City—PSYCHIATRIC—Kansas City Medical Center, c/o Ed Binge, state bus. mgr., State House, Topeka, psychiatric bldg., Medical Center, 39 and Rainbow Blvd. $300,000, Chas. L. Marshall, state engr.

▲ La., New Iberia—SCHOOLS—Iberia Parish Bd. Educ., voted $1,000,000 bonds, school imprvs.

Minn., Forest Lake—SCHOOLS—Bd. Educ., Consolidated School Dist. 56, N. Taylor, pres., voted $875,000 bonds May 27, schools, W. M. Ingemann & Assoc., 345 Minnesota St., St. Paul, archts. CD 2/10/50.

Minn., Moorhead—SCHOOL—Bd. Educ., S. G. Reinertsen, supt., voted $525,000 bonds May 20, grade school in southeast sect. of city.

▲ Miss., Gulfport—SCHOOLS—City, voted $1,895,000 bonds, school imprvs.

▲ Mo., Columbia—AUDITORIUM—Curators of University of Missouri, Leslie Cowan, secy., 111 Jesse Hall, plans by Jamieson & Spearl, 1696 Arcade Bldg., 812 Olive St., St. Louis, Zone 1, enlargement, alterations to Jesse Hall auditorium. $1,250,000. CD 3/1/46.

▲ Mo., Columbia—HOSPITAL—Curators University of Missouri, Leslie Cowan, secy., Jesse Hall, plans by Jamieson & Spearl, 1696 Arcade Bldg., 812 Olive St., St. Louis, Zone 1, 250-bed hospital for university's medical school, $5,000,000; classrooms and laboratories, $1,000,000. $6,000,000 appropriation approved. CD 4/18/51.

▲ O., Cleveland—HOUSING—Metropolitan Housing Auth. 1332 W. 28 St., plans by Project Architects & Engineers, c/o Dalton-Dalton Assoc., 979 The Arcade, Zone 14, 366 unit public housing (Cedar Apartments Exten.), Central and Scovill Aves. between E. 30 and E. 26 Sts. $4,000,000. CD 12/9/49.

▲ Tex., Fort Worth—SCHOOLS—Fort Worth Independent School Dist., 409 E. Weatherford St., voted bonds May 27, Main Senior High School, $2,225,000; Northside Junior-Senior High School, $1,500,000; Southside Junior-Senior High School, $1,250,000; East Side Elementary School, $725,000; Southside Elementary School, $750,000; Westside Elementary School $675,000; Northside Elementary School, $1,000,000; vocational shops, $775,000; stadium, athletic playgrounds, field house, $675,000; warehousing for storage for school sys., $250,000; general repair shop for school sys., $200,000; general grading, site earthwork $100,000; cafeteria, $600,000; grade school, $475,000; auditorium, $950,000. CD 5/6.

Tex., Mesquite—SCHOOL—Mesquite Independent School Dist., Mesquite, plans by Caudill, Rowlette & Scott, Box 1351, College Station, elementary school. $500,000. CD 5/29.

▲ Tex., Sherman—SCHOOL—Sherman Independent School Dist., Sherman, plans by Brown & Chapman, M & P Bldg., new high school and remodeling old high school into Junior High. $1,115,000. CD 4/15.

▲ Va., Blacksburg—LIBRARY, etc.—Virginia Polytechnic Institute, Blacksburg, plans by Carneal & Johnston, Atlantic Life Bldg., Richmond, library, $1,000,000; plans by Smithey & Boynton, 112 Kirk Ave., S. W. Roanoke, livestock and poultry research laboratory, $300,000. CD 1/25.

Que., St. Laurent—COLLEGE—College de St. Laurent, St. Laurent, plans by Larose & Larose, 1480 Blvd. St. Joseph East, Montreal, 3 story, bsmnt., and 4 story, bsmnt., rein.-con., brick, stone College units. $800,000.

(Proposal Advertisements see pp. 113 to 116)

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston.

M. A. Gamino Constr. Co., 728 Valley St., Providence, R. I. CA **$1,045,209**, est. $1,500,000. state hy. relocation Auto Rte. 20, Chicopee and Ludlow. CD 5/23, under LB.

CONNECTICUT—State Hy. Dpt., Hartford,

D. V. Frione & Co., Inc., 87 Foxon St., New Haven, Conn., LB, Alt. A, **$976,761**; Alt. B, **$997,290**, Highway Fed. Proj. FI-41, (7), Newtown and Southbury. Bids May 26.

BUILDINGS

LOW BIDS AND CONTRACTS

George W. McCreery Co., 126 Newbury St., Boston, Mass. CA **$300,000**. 4 story, 45x45 ft. FACTORY addn., CAMBRIDGE, MASS. Simplex Wire & Cable Co., 79 Sidney St., Cambridge, Mass. Cleverdon Varney & Pike, 101 Tremont St., Boston, Mass., engrs.

M. S. Kellher Co., 294 Washington St., Boston, Mass. CA **$918,555**, est. $850,000. Ward 10 MUNICIPAL BLDG., 1481-1491 Tremont St., ROXBURY, MASS. City, Dpt. P. Welfare & Park Dpt., c/o supt. P. Bldgs., City Hall Annex, Boston, Mass. CD 4/18, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

New Jersey—B.A. 6/16—At Office Chief Engineer of the Port of New York Auth., 111 8th Ave., New York, 11. N. Y., construction of Stage I, of connection with Palisades Interstate Parkway at New Jersey approach to George Washington Bridge, Contract GWB-140.002. Plans deposit $10.

New Jersey—TRAFFIC SIGNALS—B.A. 6/17—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton, traffic signals, interconnection and Cycle Selector installations, Route 25, Section 36B, Penn and Linden Sts., City of Camden, Camden Co. Plans deposit $10.

† **Md., Rockville**—SITE IMPRVS. etc.—B.A. 6/26—U. S. Eng., First and Douglas Sts. N.W., Wash. 25, D. C., site imprvs. and utilities, Army Medical Center, Forest Glen, Eng. 49-080-52-29-(25). CD 11/9/51, under Md., Forest Glen.

▲† **Del., Dover**—DORMITORIES, etc.—B.A. 7/8—Dpt. Army, 121 N. Broad St., Phila., Pa., dormitories, mess and administration bldg., Dover Air Force Base. $5,000,000. Extended date. Whiteside, Foster & Damon & Doane, Inc., du Pont Bldg., Wilmington, Del., archt. CD 5/26.

BIDS ASKED—BUILDINGS

D. C., Wash.—LIBRARY—B.A. 6/17—Dist. of Columbia, Director of Construction, District Bldg., 14 and Pennsylvania Ave., Wash., D. C., Cleveland Park Branch Library, Connecticut Ave. and Macomb St. N.W. Plans deposit $25.

SOON LETS CONTRACT—HEAVY CONSTRUCTION

Pa., Eddystone—Eddystone Mfg. Co., Eddystone, soon lets contract industrial waste treatment plant, $500,000. Albright & Friel, Inc., 121 S. Broad St., Phila., engr.

SOON LETS CONTRACT—BUILDINGS

N. J., Toms River—SUPER MARKET—Toms River Super Market Bldg. Co., 814 Main St., soon lets contract super market and parking area, $500,000. James W. Mancuso, 252 Broadway, Long Branch, archts.

N. J., Trenton—TERMINAL—Transport Mfg. & Equipment Co., 1276 Princeton Ave., soon lets contract, motor freight terminal. $500,000.

▲ **Pa., Shiremanstown**—PLANT, etc.—Gunnison Homes, Inc., New Albany, Ind., soon lets contract m'g. plant, office, sewage and waste disposal systems. $5,000,000. Stotz & Stotz, 106 6th St., Pittsburgh, archts.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany.

Merritt-Chapman & Scott Corp., 17 Battery Pl., New York 4, N. Y., LB **$1,572,849**, driving piles, constructing cofferdams and pier bases for ten easterly spans of the Tarrytown-Nyack Bridge over the Hudson River, Westchester Co.;

The Tomlinson Constr. Co., Ltd., Weedsport, N. Y., LB **$1,152,471**, construct 3-span steel deck girder bridge, grading, misc. work 1.56 mi. Lake Ontario State Parkway, Monroe Co.;

Mass. Northern Constr. Corp., 588 Essex St., Lawrence, Mass., LB **$864,331**, four highway grade separation structures, misc. work on sect. of New York State Thruway from Fly Rd. easterly to North Manlius Rd., Onondaga Co. Bids May 29. CD 5/7.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany.

Nassau-Mascali Constr. Corp., 69-34 61 Ave., Woodside, N. Y., LB **$1,163,283**, wid'n., resurf. 10.02 mi. Northern State Parkway from Nassau-Queens Co. line to Union Ave., Nassau Co.;

Triple Cities Constr. Co. and N. R. Corbisello, Inc., 36 Tompkins St., Binghamton, N. Y., LB **$1,380,186**, construct 2.32 mi. Brandywine Ave. extens. of Binghamton Arterial from underpass on Brandywine Ave. to N. Chenango St. in Port Dickinson, etc., 0.18 mi. Broome Co.;

Jess F. Howes, Sidney Center, N. Y., LB **$569,121**, construct 4.5 mi. Livingston Manor-Youngsville County Rd., Sullivan Co.;

Johnson, Drake & Piper, Inc., 86 Trinity Pl., New York 6, N. Y., LB **$3,020,884**, construct 7.73 mi. Thruway with twin 25-ft concrete arteries, misc. work totaling 0.66 mi., Genesee Co.;

Collins Bros., Waterford Rd., Mechanicville, N. Y., LB **$3,342,278**, construct 4.49 mi. twin 25-ft. concrete arteries of the Thruway, four highway grade separation structures, one stream bridge, access drives, approachways relocation 0.69 mi. Rte. 5, misc. work totaling 1.33 mi., from Burch Creek easterly to point 1 mi. beyond East Schuyler, Herkimer Co.;

Lizza & Sons, Inc., 21 Orchard St., Oyster Bay, N. Y., LB **$1,162,981**, construct 7.54 mi. Nesconsett-Port Jefferson Station Rd. (County Road 80) with twin 25-ft. b. conc. mall-separated arteries, misc. work, Suffolk Co.;

Torrington Constr. Co., Inc., Torrington, Conn., LB **$317,673**, construct 4.41 mi. highway from Helena, northeasterly to Hogansburg with bit. macad. pavement 18 ft. wide, Franklin and St. Lawrence Counties. Bids May 29. CD 5/7.

▲ **Elmhurst Constr. Co.**, 53-09 97 Pl., Corona, N. Y., CA. Approx. **$4,000,000**. earth dam and hydro-electric power plant, Sacandaga River, NEW YORK. Niagara Mohawk Power Corp., 250 Park Ave., New York 1 7, N. Y. CD 5/2/50, under Unclassified.

▲ **Racquette Constr. Corp.**, Potsdam, N. Y. CA. **$4,000,000**. Hydro-electric generating plant on Racquette River, SOUTH COLTON, N. Y. Niagara Mohawk Power Corp., 250 Park Ave., New York, N. Y.

BUILDINGS

LOW BIDS AND CONTRACTS

Fresh Meadow Village Homes, c/o Jospeh Unger, archt., 138-22 78 Ave., Flushing, N. Y. Owner Builds. Approx. **$440,000**. 44 one-family HOUSES in area bounded by 50 Ave., Weeks Lane, 199 St., 56 Ave. and Francis Lewis Blvd. KEW GARDENS, N. Y.

▲ **Glassmont Builders, Inc.**, 1503 Greenwood St., Camden, N. J., Separate Contracts, **$1,100,000**, RESIDENTIAL DEVELOPMENT, off Delsea Dr., GLASSBORO, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archts.

Rolen Constr. Co., 301 N. York Rd., Jenkintown, Pa., CA **$525,000**. RESIDENTIAL DEVELOPMENT, Fernwood Rd., ABINGTON, PA. Nolan Homes, Inc., 301 N. York Rd., Jenkintown, Pa. James Nolan, Jr., 1649 N. Broad St., Phila., Pa., archt.

M. DeStefano & Sons, 2203 8th Ave., Altoona, Pa., CA Approx. **$85,000**. 85x85 ft., concrete block, brick Armature MFG. BLDG., ALTOONA, PA. Keystone Armature Works, Union Ave., Altoona, Pa. George Puderbaugh, 1511 13th St., Altoona, Pa. archt. (Correction —price). CD 5/27, under CA.

▲† **Irwin & Leighton**, 1505 Race St., Phila. Pa., CA **$1,881,200**, SHOP bldg., paving, utilities, etc. CHAMBERSBURG, PA. U. S. Eng., 24 St. and Maryland Ave., Baltimore, Md. Bids May 6. CD 5/15, under LB.

† **Perry J. Goldman Constr. Co.**, 225 S. 15 St., Phila., Pa. CA. **$612,600**, RECEIVING BLDG. 44, paving, sidewalks and sewers, at Frankford Arsenal, Inv. No. ENG 36-109-52-262. PHILA., PA. U. S. Eng., 121 N. Broad St., Phila. 1, Pa. Bids About 5/8. CD 4/9.

▲ **Jackson Homes, Inc.**, 4411 N. Broad St., Phila., Pa. Separate Contracts. Approx. **$1,200,000**. RESIDENTIAL DEVELOPMENT, Byberry and Warrington Rds., PHILA., PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

▲ **George C. Martin**, 6213 31 St. N. W., Wash., D. C., CA **$1,600,000**. SHOPPING CENTER, Bradley Blvd., BETHESDA, MD. Samuel Barrow, 1321 Connecticut Ave. N.W., Wash., D. C. CD 3/21.

SOUTH

BIDS ASKED—BUILDINGS

† **N. C., Fort Bragg**—PSYCHOLOGICAL WARFARE SCHOOL—B.A. On Or About 6/18—U. S. Eng., 308 Customhouse, Wilmington, construct psychological warfare school, incl. modification and imprvs. to 21 bldgs., interior alteration imprv., electrical sys., install warm air heating sys. in 5 bldgs., construct heater room addns., install air-conditioning sys. in 1 bldg., etc. Serial No. Eng 31-075-52-33. CD 12/26.

S. C., Pinopolis—POWER PLANT—B.A. 6/24—South Carolina Public Service Auth., Moncks Corner, power plant, superstructure, facilities and mechanical equip. installation. Ford, Bacon & Davis, Inc., 39 Broadway, New York, N. Y., engr.

† **Tenn., Chattanooga**—TRAINING CENTER—B.A. 6/25—Dpt. Navy, Officer in Charge of Construction, Box 365, Naval Base, Charleston, S. C., addn. for marine corps use to U. S. Naval and Marine Corps Training Center, NOY 71521. Plans deposit $10.

† **N. C., Fort Bragg**—MEAT CUTTING PLANT—B.A. On Or About 6/26—U. S. Eng., 308 Customhouse, Wilmington, 88x95 ft. rein.-con. meat cutting plant, incl. installing refrigeration equip., Serial No. Eng 31-075-52-35. CD 12/26.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **VIRGINIA**—State Hy. Dpt., Central Highway Office Bldg., Richmond,

A. B. Burton, Lynchburg, Va., CA **$98,015**, wid'n 1.05 mi. U. S. 29 to close gap at Lawyers Rd. between Lynchburg and Altavista, Campbell Co.;

Wiley N. Jackson Co., Inc., R. F. D. 4, Roanoke, Va., CA **$416,282**, 2.88 mi. of four-lane construction U.S. 11 between Pulaski and Dublin, incl. bridge over Thorn Spring Branch, Pulaski Co.;

Robertson, Bolen & Fowler Co., Buchanan, and **Robertson-Henry Co., Inc.**, Huntington, W. Va., CA. **$428,975**, 2.73 mi. of four-lane highway U. S. 11 from Lexington, north, closing the two-lane gap between Lexington and Staunton, Rockbridge Co.; CA **$443,408**, 1.8 mi. parallel road for four-lane roadway U. S. 60 between Island Ford Bridge and Lowmoor, Alleghany Co.;

W. H. Scott, Franklin, Va., CA **$105,937**, 0.85 mi. 36 ft. widening with curb, gutter and sidewalk Rte. 30 between West Point and Port Richmond, King William Co.; CA **$61,009**, soil cement base, hard surfaced 3.7 mi. Secondary Rte. 622, between Rehoboth and Traffic, Lunenburg Co.;

Luck Constr. Co., Rothesay Rd. and Belt Line, Richmond, Va., CA **$199,351**, reconstruct 2.16 mi. U. S. 17, east and west of Loretta, Essex Co.;

Moore Bros., Staunton, Va., CA. **$164,070**, rebuilding 2.09 mi. Rte. 17, west of Stafford Co. line, Fauquier Co.;

R. H. Rose, Richmond, Va., CA **$83,493**, stabil. base, hard surfaced 4.92 mi. Secondary 665, 630, 637, between U. S. 15 and Rte. 636, Prince Edward Co.;

James A. McQuail, Bluefield, Va., CA **$91,119**, stabil. base, hard surfaced 2.48 mi. Secondary 658 between Bascomb and Lebanon, Russell Co.;

P. C. Goodloe & Sons, Fredericksburg, Va., CA **$110,615**, stabil. base, hard surfaced 7.47 mi. Secondary 612, between Holladay and Porters, Spotsylvania Co.;

J. R. Ford Co., Lynchburg, Va., CA **$150,607**, 3.55 mi. of pavement, bridge widening and strengthening from Dahlgren Bridge over Potomac River, south, U. S. 301, King George Co.;

A. B. Torrence Co., Elkton, Va., CA **$179,822**, 5.73 mi. reconstruction Rte. 20 between Carters Bridge and Charlottesville, Albemarle Co.;

Talley & Flanary Co., Staples Mill and Dunbarton Rd., Richmond, Va., CA **$65,949**, wid'n and straigthening 1.41 mi. Secondary 683 of Forest Hill Ave. extens. between the ACL overpass and Granite, Chesterfield Co. Grand total $2,598,652.

▲† **Doyle & Russell**, Central Natl. Bank Bldg., Richmond, Va., CA. **$3,122,000**. supersonic tunnel, incl. a laboratory and office bldg., LANGLEY FIELD, VA. National Advisory Comm. for Aeronautics, Langley Field, Va. CD 4/23, under LB.

▲ **NORTH CAROLINA**—State Hy. & P. Wks. Comm., Raleigh.

E. B. Towles Constr. Co., Market St. Rd., Wilmington, N. C. LB, **$195,153**, est. $150,000-$175,000, reinf. traffic bound macad., b. conc. binder and surf. 2.14 mi. U.S. 74 and 76, Proj. 3531, F-183 (4), S.F. 183 (5). New Hanover Co.;

F. D Cline Paving Co., Box 349, Raleigh, N. C., LB, $410,213, STBC, b. conc. binder and surf. 12.98 mi. Proj. 4828 Wake and Johnston Counties;

Gilbert Engr. Co., Inc., Statesville, N. C., LB, **$111,559**, est. $100,000-$125,000. traffic bound macad., bit. surf. tr. 4.64 mi. Proj. 9-303, S-458 (1), Gaston Co.;

J. C. Critcher, Inc., Technical Bldg., Asheville, N. C. LB **$520,704**, est. $400,000-$500,000 traffic bound macad., bit. surf. tr. 7.34 mi. U.S. 23, Proj. 9630 F-275 (6), Macon and Jackson Counties;

Blythe Bros., Box 989, Charlotte, N. C., LB, **$234,091**, est. $200,000-$225,000. b. conc. surf. 60.8 mi. Proj. 7-9-61-246, Mecklenburg Co.;

Ben B. Pronst, Box 426, Concord, N. C., LB, **$105,470**, est. $100,000-$125,000. bit. surf. tr. 30.9 mi. Proj. 7-9-66-226, Union Co.;

Midstate Contrs., Inc., Hickory, N. C., LB, **$82,118**, est. $75,000-$100,000. bit. surf. tr., 23.5 mi. Proj. 10-9-93-204, Henderson Co.;

A. R. Thompson Constr., Inc., Rutherfordton, N. C., LB, **$63,289**, est. $50,000-$75,000, STBC, bit. surf. tr. or b. conc. surf. 10.6 mi. Proj. 9-9-80-232, Cleveland Co. Bids May 27. CD 5/19.

† **Erie City Iron Works**, 1422 East Ave., Erie, Pa. LB. **$533,395**, steam generators and complementary equip. Inv. 52-12, FORT BRAGG, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. CD 1/20.

▲† **Southern Constr. Co.**, Daniel Field, Augusta, Ga., LB, **$873,419**, barracks, mess and administration bldg., warehouses at Turner Air Force Base, ALBANY, GA. U. S. Eng., Post Office Bldg., Savannah, Ga. Bids May 22. CD 5/8.

† **J. M. Brown Constr. Co**, P.O. Box 102, Shreveport, La. CA, **$833,743**. aircraft shop and base shop, Lake Charles Air Force Base, Inv. 52-36, LAKE CHARLES, LA. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. CD 5/21, under LB.

▲ **KENTUCKY**—State Hy. Dpt., Frankfort,

L. P. Cavett, Lockland, O. LB **$63,194**, bit. surf. Class C-1 10.758 mi., RS 49-152, Harrison Co.;

The Fuller-Davies Co., Frankfort, Ky. LB **$382,789**. bit. surf. Class I bit. concrete base (grav. aggregate) 3.016 mi., Newport-Fort Thomas Rd., U 529 (2), SP 19-391, Campbell Co.;

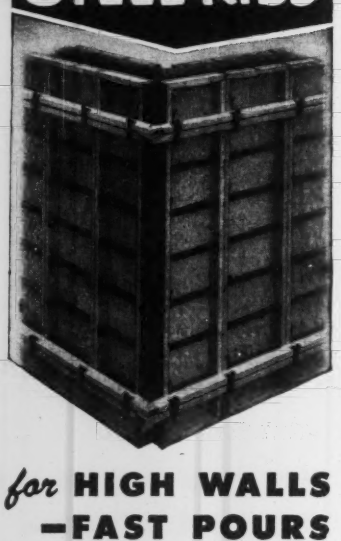
Nally & Gibson, Springfield, Ky. LB **$62,915**. reconstr. traffic bound limestone 5.706 mi. Tilten-Days Mill Rd., RS 35-630, Fleming Co.; LB **$71,533**, reconstr. traffic bound limestone 3.245 mi. Shopville-Bent Rd., RS 100-695, Pulaski Co.;

Kentucky Road Oiling Co., Frankfort, Ky. LB **$390,282**. bit. surf. Class I 6.404 mi. Grayson-Asland Rd., FI 4 (6) SP 22-28, Carter Co.;

H. K. Williams Co., Inc., 4141 Park Blvd., Louisville, Ky. LB **$98,779**. bit. surf. Class I 13.85 mi., Jefferson Co.;

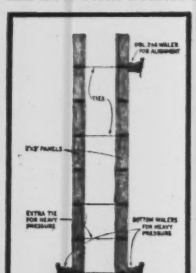
R. C. Durr, Walton, Ky. LB **$63,631**. combination. reconstr. traffic bound limestone bit. surf. Class C-1 4.961 mi., Kentucky 17 Grand Co. line Road, RS 96-417, 96-437, RS 96-417, Pendleton Co.; reconstr.

SYMONS FORMS with STEEL RIBS



for HIGH WALLS —FAST POURS

Symons heavy duty Steel Rib forms assemble and strip quickly and easily saving you time and labor costs. Because stripping is simple, and the steel rib reinforces the vital parts, Symons Forms last from 50 to 100 uses . . . this means cost per use is exceptionally low.



Try these forms on a rental basis. Rental charges apply on the purchase price.

To get a comprehensive picture of how Symons forming system works and its cost to you, send in the plans for your next job. We will study your needs and send you a form layout and job cost sheet—no obligation.

Symons

SYMONS CLAMP & MFG. CO. DEPT. F2
4265 DIVERSEY AVE., CHICAGO 39, ILL.

Kindly send information regarding Symons Steel Rib Forms.

Name_____

Address_____

City_____ Zone____ State_____

traffic bound limestone 2.347 mi. KY 609-Pleasant Hill Rd., RS 96-437, Pendleton Co.;

W. C. Snider, Danville, Ky. LB **$123,037**, combination reconstr. traffic bound limestone 3.399 mi. Waterford-Plum Creek Rd., RS 108-187, 108-287, 108-307, 15-414, RS 108-187, and reconstr. traffic bound limestone 4.91 mi. Elk Creek Mt. Washington and Dale Lane-Whitfield Rd., RS 108-287, 108-307, 15-414, Spencer and Bullitt Counties;

McDade & McDade, Fulton, Ky. LB **$64,806**, bit. surf. Class C-1 9 mi., SP 70-230, 72-211, Livingston and Lyon Counties; bit. surf. Class C-1 8.85 mi. SP 42-408, 42-428, Graves Co.;

Southern Quarries & Contg. Div. of New York Coal Sales Co., Chillicothe, O., LB **$83,004**, bit. macad. surf. 7.921 mi., SP 54-280, 54-300, Hopkins Co.;

Wood & Barton Co., 410 Ann St., Frankfort, Ky. LB **$120,098**, reconstr. traffic bound limestone 2.424 mi. Blackey-Roxana Rd., RS 67-199, Letcher Co.;

Sam Nally Co., Bardstown, Ky. LB **$68,804**, reconstr. traffic bound limestone 5.307 mi. Blue Level Rd. RS 114-628, Warren Co.;

Middle State Bituminous Corp., Ashland, Ky. LB **$80,361**, rock asph. surf. 11.909 mi. SP 64-53, 58-17, Lawrence and Johnson Counties;

Robert M. Robinson, Owensboro, Ky. LB **$95,285**, bit. macad. surf. 10.955 mi., SP 110-326, 110-6, Todd Co.;

Ralph Rogers & Co., Inc., 720 Argyle Ave., Nashville, Tenn. LB **$104,141**, bit. surf. Class I 1.343 mi. Hopkinsville-Clarksville Rd., AF 306 (7) SP 24-125, Christian Co. Bids May 23 CD 5/7.

BUILDINGS
LOW BIDS AND CONTRACTS

The English Constr. Co., Altavista, Va., LB **$678,700**, HOSPITAL, SOUTH HILL, VA. Community Memorial Hospital, c/o Louis W. Ballou & Charles C. Justice, archts., 106 E. Cary St., Richmond, Va. Bids May 23. CD 5/19.

▲ **Blount Bros. Constr. Co.**, P.O. Box 1144, Montgomery Ala., CA $2,499,000, RADAR and ELECTRONICS BLDG., flight operations hangar, MARIETTA, GA. Lockheed Aircraft Corp., Marietta, Ga. Bids May 19. CD 5/27, under LB.

Jack A. Roberts, 1318 N. 23 St., Birmingham, Ala., Owner Builds, $650,000, 68 RESIDENCES, ANNISTON, ALA.

▲ **Jordan Contg. Co. Andrews Rd. and Hugh McMath Constr. Co.**, Brennan Rd., both Columbus, Ga. CA $1,435,000, ammunition storage MAGAZINES, FORT McCLELLAN, ALA. U. S. Eng., P. O. Box 1169, Mobile 7, Ala. CD 5/27, under LB.

▲ **Air Products Inc.**, 733 W. Broad Emmaus St., Allentown, Pa. CA $1,175,000. PLANT unit for production of anhydrous ammonia, VICKSBURG, MISS. Spencer Chemical Co., Box 604, Pittsburg, Kan. CD 5/23.

English Constr. Co., Altavista, Va. CA $587,700, Mary N. Smith HIGH SCHOOL, ACCOMAC, VA. Accomac Co. Bd. Educ., Accomac, Va. Bids May 14. CD 4/24.

Otho Tapp, 1566 Washington St., Louisville, Ky. LB $512,995, county HOSPITAL, SHELBYVILLE, KY. Shelby Co. Fiscal Court, Shelbyville, Ky. Bids May 27. CD 5/12.

Sam Melson, Shelbyville, Tenn., CA $641,900, LIBRARY, DORMITORY for Girls at Middle Tennessee State College, MURFREESBORO, TENN. State Dpt. Educ., State Office Bldg., Nashville Tenn. Bids May 6. CD 5/20, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ † **O., Akron**—APRON, TAXIWAY PAVING, etc.—B.A. 6/24—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., construct apron and taxiway paving, fuel storage, hangar, warehouse, paint, oil and dope storage, motor service shop, overall clearing and grading, utilities and roads at Akron-Canton Airport, Serial No. ENG 46-022-52-124. CD 5/22.

Ind., Indianapolis—SCHOOL—B.A. 6/17—Washington Twp. Chester A. McKamey, trustee, 654 E. 49 St., Zone 5, Delaware Train Township Grade School, 73 St. and Hoover Rd., near here $500,000. Plans deposit $50. Bids 5/9, rejected. Edward James, 122 E. Michigan St., archt. CD 4/25.

O., Cincinnati—YOUTH CENTER—B.A. 6/17—Juvenile Detention Home, Court House and Court House Annex Comn., 2 story, bsmnt., rein.-con., cross-shape youth center, incl. classroom, 2 dormitories, Auburn Ave. $600,000. Extended date. Potter, Tyler, Martin & Roth 128 E. 6 St., and Felsberg & Gillespie, Inglas Bldg., archts., Willard C. Pistler, 4 W. 7 St., engr. CD 5/2.

Mich., Caro—HOSPITAL—B.A. 6/24—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, 2 story, brick, steel, concrete receiving unit addn., $300,000; brick concrete custodian bldg., $300,000 at Caro State Hospital. Plans deposit $25 each, Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, archt.

SOON LETS CONTRACT—BUILDINGS

▲ **Ill., Springfield**—PLANT—Allis-Chalmers Mfg. Co., 3000 S. 6 St., assembly plant, $15,000,000. Hadley & Worthington, Myers Bldg., archts. CD 3/20.

Ind., Tipton—SCHOOL—Cicero-Tipton Bldg. Corp., Lester Hensely, pres., Tipton, soon lets contract, 1 story, irregular, brick, steel, rein.-con. school, Ash St. near Armstrong St. $500,000. Everett I. Brown, 1203 Circle Tower, Indianapolis, Zone 4, archt.

▲ **Mich., Detroit**—CHURCH—St. Martha Episcopal Church, 63 E. Hancock St., soon lets contract, 1 story, bsmnt., brick, stone church, Joy St. near Greenfield Rd. $1,000,000. Giffel & Vallet, Inc., 1000 Marquette Bldg., archt. CD 4/15.

HEAVY CONSTRUCTION
SOON LETS CONTRACT—BUILDINGS

▲ **ILLINOIS**—State Div. Hys., Springfield.

H. H. Hall Constr. Co., 211 S. 15 St., East St. Louis, Ill., CA, $509,265, bit. resurf. 2.1 mi. marked U. S. Alternate 67, Madison Co.;

Bushman Constr. Co., 463 Mill Creek Parkway, Kansas City 2, Mo., CA, $1,250,192, c. conc. 10.07 mi. and 1 bridge U. S. 164, Greene, Jersey and Macoupin Counties;

Orr Constr. Co., 27 E. 19 Pl., Chicago Heights, Ill., CA, $528,000, c. conc. and 2 bridges 4.24 mi. marked Ill. Route 1, Iroquois Co. Bids May 16, awarded May 27. CD 5/22, under LB.

Geo. D. Hardin, 2130 S. Michigan St., Chicago 16, Ill. CA $126,500. Lincoln Park imprvs., water line, sewer line, valves, fittings, hydrants, CHICAGO, ILL. Chicago Park District, 425 E. 14 St., Chicago 5, Ill. Awarded May 19.

MICHIGAN—State Hy. Comn., 222 Townsend St., Lansing, Zone 13.

Denton Constr. Co., 7-170 General Motors Bldg., Detroit, Mich. CA $562,713, est. $500,000. 0.434 mi. concrete dual road, incl. city lighting, power and signal facilities, water main, John C. Lodge Expressway, UI 82-127 C72 (UI 404 44), Wayne Co. CD 5/21, under LB.

HEAVY CONSTRUCTION
SOON LETS CONTRACT—BUILDINGS

▲ **John Struhar**, 19647 Hilliard Rd., Rocky River, 16, O. Owner Builds. Approx. $1,150,000. 51 bsmntless, brick, frame HOUSES, Hilliard Rd. west of Wooster Rd. on 22-acre site, ROCKY RIVER, O.

Chas. B. Johnson & Son Co., 6 N. Michigan St., Chicago 2, Ill. CA $500,000. TERMINAL TOWER, coach yards, sewers, water lines, CHICAGO, ILL. New York, Chicago & St. Louis R. R., H. F. Whitmore, ch. engr., Terminal Tower, Cleveland 1, O. Awarded May 14.

▲ **Jacobsen Bros. Co.**, 20 N. Wacker Dr., Chicago, 6, Ill. CA $1,068,000. Northfield Twp. High SCHOOL, NORTHFIELD, ILL. School District 225, Northfield, Ill. Bids May 21, awarded May 26. CD 5/27, under LB.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

▲ **Mo., St. Louis**—TELEPHONE EXCHANGE—B.A. 6/18—Southwestern Bell Telephone Co., G. J. VandeSteeg, ch. engr., 1010 Pine St., Zone 1, superstructure, 3 story, 133x142 ft., brick, rein.-con. dial long-distance telephone exchange and alterations to existing bldg. $1,500,000. Extended date. C. E. Overbeck, c/o owner, archt. CD 1/2.

▲ **Tex., Midland**—CHURCH—B.A. 6/27—First Baptist Church, Congregation, Midland, 48,170 sq. ft. masonry church. $1,000,000. Mark Lemmon, 1210½ Main St., Dallas, archt. CD 2/28/51, under LB.

HEAVY CONSTRUCTION
SOON LETS CONTRACT—BUILDINGS

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul.

Anderson & Sons, 100 N. 7 St., Minneapolis, Minn. LB $1,449,840. paving 7.3 mi. between Wayzata and Dakota Ave. in St. Louis Park, Hennepin Co.

Megarry Bros., St. Cloud, Minn. LB $620,884. paving 19 mi. between Big Lake and 2.4 mi. south of North Sherburne Co. line and St. Cloud and Sauk Rapids, Sherburne, Stearns and Benton Counties. Bids May 23. CD 5/12.

† **A. Hedenberg & Co., Inc.**, 4621 E. Superior St., Duluth, Minn. CA $528,900. airmen's dormitories, mess and admin. bldg., Duluth Air Force Base, Inv. 52-91, DULUTH, MINN. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids May 21. CD 5/7.

▲ **SOUTH DAKOTA**—State Hy. Comm., Pierre.

Northwestern Engineering Co., Rapid City, S. D., CA $144,713, one 168 ft. continuous concrete bridge, U 522 (3), Pennington Co.;

Guy H. James Constr. Co., 1st Natl. Bldg. and **Condon-Cunningham Co.**, 4229 Lafayette St., Omaha, Neb., CA $923,874, 2,004 ft. substructure, Proj. WAR 165-1, Brule Co. Bids May 13. CD 5/2.

▲† **Western Contg. Corp.**, 400 Benson Bldg., Sioux City, Ia. LB $1,850,878, est. $2,085,074 concrete, $1,677,572, est. $1,761,528 asphalt runways and taxiways; LB $1,385,299, est. $1,505,698 concrete, LB $1,159,655, est. $1,224,204 asphalt aprons pavement, Forbes Air Force Base, Eng. 23-028-52-54, TOPEKA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids May 23. CD 4/23.

BUILDINGS
LOW BIDS AND CONTRACTS

D'Arcy Leck Constr. Co., 2838 Stevens Ave., Minneapolis, Minn. CA $750,000. general contract HOUSING, incl. sixty-five 1 story, bsmnt., 24x40 ft. dwellings, DULUTH, MINN. The Highland Park Acres Co-operative, c/o H. W. Fridlund, archt., 424 Second Ave. S., Minneapolis, Minn. CD 11/15/50.

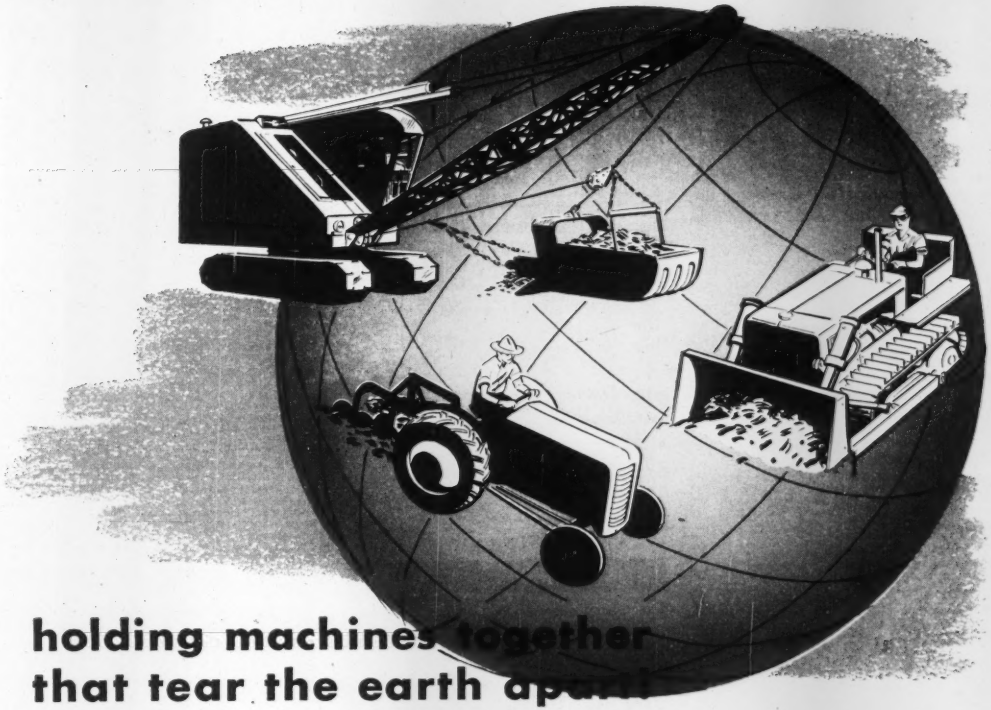
▲ **Robert E. McKee**, Box 2848, Dallas, Tex., CA, $8,708,109. HOSPITAL and CLINIC, DALLAS, TEX. Dallas Co., Court House, City Hall, Main and Harwood Sts., Dallas, Tex. Bids May 15, awarded May 28. CD 5/26, under LB.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ † **Calif., Muroc**—HOSPITAL—B.A. 6/25—U. S. Eng., 751 S. Figueroa St., Los Angeles, 3 story, rein.-con.

(Continued on page 134)



holding machines together that tear the earth apart

Lamson HEAVY DUTY fasteners

Tractors, bulldozers, power shovels and other heavy earth-moving equipment demand the ultimate in fastener strength.

That's why many leading manufacturers insist upon using Lamson Cap Screws, Machine Bolts, Cotters, Tractor Bolts, etc. in the original manufacture of these machines.

What better proof of the *dependability* of Lamson heavy-duty fasteners could there be?

Lamson + Sessions

The LAMSON & SESSIONS Co.
1971 West 85th St. • Cleveland 2, Ohio
Plants at Cleveland and Kent, Ohio • Birmingham • Chicago

Check the products below that interest you; tear off bottom of ad and send to us for complete information.

HI-TENSILE CAP SCREWS
"1035" Heat Treated Steel.

WIRE ROPE CLIPS
Hi-center saddles, extra-strength U-bolts.

PIPE PLUGS
Forged steel, heat treated.

COTTER PINS
Steel, brass, aluminum and stainless steel.

LOCK NUTS
Economical, vibration proof. Can be used repeatedly.

"BENT BOLTS"
Including U bolts, eye bolts, hook bolts, etc.

TRACTOR BOLTS
Made to manufacturers standards.

SQUARE AND HEX MACHINE SCREW NUTS
Semi-finished, hot pressed, cold punched.

(Continued from page 132)

hospital at Edwards Air Force Base, ENG 04-353-52-66. $2,000,000. Plans deposit $25. CD 5/24/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **CALIFORNIA**—State Div. Hys., 120 Spring St., Los Angeles.

R. M. Price, 2285 Pine Crest Dr., Altadena, Calif., LB, $1,206,625, 7 rein.-con. bridges and 0.54 mi. wid'n. city streets, b. conc. pavement Ramona Freeway in Pomona and Claremont, Los Ageles Co. Bids May 22. CD 4/30.

ALASKA

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Bethal Constr. Co.**, 420 Queen Ann Ave., Seattle, Wash. CA. $1,944,000. Proj. 501-245, Bethal HOSPITAL, BETHAL, ALASKA. Bureau Indian Affairs, Dpt. Interior, Interior Bldg., 19 and C Sts., Wash. 25, D. C. Bids May 27. CD 4/30.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

▲ **N. S., Greenwood**—HANGAR—B.A. 6/17—Defence Constr. (1951) Ltd., 1032 Gottingen St., Halifax, 160 ft. span steel hangar at air force base. Approx. $1,000,000. Plans deposit $100. C. J. Connolly, c/o owner, regional engr.

BIDS ASKED—BUILDINGS

Ont., St. Catherines—SCHOOL—B.A. 6/16—St. Catherines Bd. Educ., 15 Welland Ave., Carleton St. Senior Public School. $620,000. Plans deposit $50. Macbeth & Williams, 104 Queen St., archts. CD 11/15.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

P. Leitch Constr. Ltd., 720 McIntyre Bldg., Winnipeg, Man. CA, $542,211, central heating plant;

Bird Constr. Co. Ltd., Sargent and Erin Sts., Winnipeg, Man., CA, $618,315, central heating plant at R.C.A.F. Station, WINNIPEG, MAN. Defence Constr. Ltd., 400 Kensington Bldg., Winnipeg, Man. W. J. Milhausen, c/o owner, engr.

BUILDINGS

LOW BIDS AND CONTRACTS

Robertson Constr. & Eng. Co. Ltd., 512 Clifton Ave., Niagara Falls, Ont., CA, $520,000, 89x243 ft., superstructure for diesel engine SHOP, FORT ERIE, ONT. Canadian National Rys., Union Station, Toronto, Ont. Bids Apr. 17, awarded May 23. CD 4/7.

▲ **Anglin-Norcross Quebec Ltd.**, 892 W. Sherbrooke St., Montreal, Que., CA, $1,000,000, ARSENAL PLANT addns, ST. PAUL L'ERMITE, Que. Govt. of Canada, Dpt National Defence Cartier Sq., Ottawa, Ont. Defence Constr. (1951) Ltd., 1207 Guy St., Montreal, Que., engr.

Proposed Projects

WATER SUPPLY

Calif., Los Angeles—Los Angeles County Water Works District 4, Hall of Records, $504,000 bond election July 1, exten., imprv. water system, Lancaster.

▲ **Tex., Corpus Christi**—Lower Nueces Water Supply Dist., City Hall, earth and concrete water retention dam and 3,000 ft. spillway to supply water to Corpus Christi and outlying towns, $13,000,000. Ambursen Engineering Co., M & M Bldg., Houston, consult. engr. CD 12/3/48.

Tex., Irving—City, bond election of May 24 postponed. C.I. water line extens., $410,000; water sys. rehabilitation and replacing undersized mains, $301,000; water supply well, $48,500; 2 steel elevated water storage tanks, $100,000. Koch & Fowler, 3900 Lemmon St., Dallas, consult. engrs. CD 4/17.

SEWERS, WASTE DISPOSAL

▲ **Ind., New Castle**—City, City Hall, sewerage sys. expansion, $2,000,000. CD 8/22/46.

Pa., Warren—Warren Boro, Municipal Bldg., sewage disposal plant, 3 pumping stations, Pleasant Twp. near here. $500,000. Chester Engineers, 210 E. Parkway, N. S. Pittsburgh, consult. engrs. CD 4/20/45.

▲ **Tex., Irving**—City, bond election May 24 postponed, sanitary sewers, new lines, collection sys., existing sys. rehabilitation, $1,554,380; doubling capacity sewage treatment plant, $87,120. Koch & Fowler, 3900 Lemmon St., Dallas, consult. engrs. CD 4/17.

STREETS AND ROADS

▲ **Ill., Chicago**—City, City Hall, resurfacing 79 St. from State St. to Damen Ave., $275,000; resurfacing Commercial Ave. from 87 to 95 Sts., $100,000; resurfacing Exchange Ave. from 79 to 83 St., resurfacing Commercial Ave. from 83 to 87 Sts., $130,000; resurfacing and wid'n. Vincennes Ave. from 95 to 107 Sts., $300,000; resurfacing Damen Ave. from Belmont Ave. to Irving Park Rd. and wid'n. from 38 to 42 ft., $400,000; resurfacing Division St. from Ashland Ave. to California St., $200,000; resurfacing 47 St. from Halsted to State Sts., $100,000; resurfacing center 24 ft. of Sheffield Ave. from Lincoln Ave. to Clark St., $60,000; resurfacing Grand Ave. from Fullerton Ave. to Le Claire St., $300,000; resurfacing 87 St. from Commercial St. to S. Chicago Ave., $100,000. CD 4/24/45.

▲ **Alaska, Anchorage**—Alaska P. Wks., Dpt. Interior, Juneau, $2,000,000 bond election June 10, paving 187 blocks of streets. $3,000,000. CD 9/24.

EARTHWORK, WATERWAYS

▲† **Illinois**—U. S. Eng., 834 U. S. Court House & Custom House, 1114 Market St., St. Louis 1, Mo. and City of Alton, City Hall, Alton, Ill. construction of combined levee and floodwall about 3500 ft. long to protect city of Alton from Mississippi River incl. also an improved interior drainage system for community, $4,186,000.

▲ **O., Cleveland**—City, City Hall, Lakeside and 6 Sts., steel, concrete seawall near Lake Erie Shoreline from E. 55 St., to point near E. 72 St., $1,400,000. John C. Wenrick, c/o owner, comr. Eng. CD 11/22/49.

AIRPORTS

▲† **Pa., Pittsburgh**—DORMITORIES, etc.—U. S. Eng., 121 N. Broad St., Phila., dormitories, mess, admin. bldgs., officers quarters at Greater Pittsburgh Airport, Moon Twp., near here. $1,000,000. Hunting, Larsen & Dunnells, Century Bldg., engrs. CD 9/28.

▲ **Wash., Seattle**—HANGAR—Boeing Airplane Co., 7755 E. Marginal Way, plans by J. W. Maloney, Central Bldg., Zone 4, hangar across E. Marginal Way on Boeing Field. $5,000,000. CD 2/9/51.

LATIN AMERICA

British Guiana, Houston (Postal Dist. Georgetown)—Colonial Development Co., Georgetown, British Guiana, plans saw mill, capacity 70 tons of sawn timber a day; 6 kilns each capable of handling 40 tons of lumber. $1,000,000.

▲ **Mexico, Chilpancingo**—State Govt., Palacio del Estado, Chilpancingo, Gro., plans cement factory. $1,000,000.

▲ **Mexico, Mexico City**—Col. Jose Garcia Valseca, Balderas, 52, Mexico, plans 22 story office. $1,200,000.

▲ **Mexico, Morelia**—Nacional Financiera, S. A., V. Carranza, 25, Mexico City, plans celulose factory. $15,000,000.

PUBLIC BUILDINGS

▲ **Calif., El Segundo**—SCHOOLS—El Segundo Unified School Dist., El Segundo, voted $1,406,000 bonds, 2 new elementary schools and new junior high school.

▲ **Calif., Redwood City**—SCHOOLS ADDNS.—Redwood City Elementary School Dist., James and Duane Sts., voted $1,400,000 bonds, school addns.

▲ **Calif., Redwood City**—SCHOOL—Sequoia Union High School Dist., Broadway and El Camino Real, Redwood City, voted $2,500,000 bonds, high school.

▲ **Calif., Santa Barbara**—SCHOOL IMPRVS.—Santa Barbara Elementary School Dist., Santa Barbara, voted $1,460,000 bonds, school imprvs. CD 4/29.

Calif., Santa Barbara—LIBRARY—University of California, Santa Barbara, plans by Chester Carjola, 129 De La Guerra St., 3 story, rein.-con. library bldg., $'35,000; plans by Soule & Murphy, 116 E. Sola St., 2 story, rein.con. science bldg., $900,000. Donad F. Shugart, 35 N. Raymond St., Pasadena, consult. engr. CD 1/21/46.

Conn., Beacons Falls—SCHOOL—Town, Alfred Kleyman chn., school, Clerk Property, $500,000. CD 6/30/50.

Conn., Middletown—HOUSING—Town Housing Auth., L. W. Johnson, dir., housing, Long Lane, $500,000.

▲ **D. C., Wash.**—SCHOOLS—Dist. of Columbia, Bd. Educ., 13 and K Sts. N.W., Junior High School vicinity of 4 St. and Mississippi Ave. S.E., $2,500,000; elementary school vicinity of Stanton and Elvans Rd. S.E., $890,000; Health School addn., 13 and Alliston Sts. S.W., $410,000; elementary school, vicinity of 1300 block of S. St. N.W., $750,000; Shephard Elementary School, 14 St. and Kalmia Rd. N.W., $400,000, all foregoing (1954 Budget); Teachers College, $5,000,000; Anacostia High School, 16 and R. Sts. S.E., relocate athletic field, $600,000; elementary school vicinity of North Mass. Ave. and West N. Capitol St., $1,060,000, all foregoing (1955 budget) Slowe Elementary School addn., 14 and Jackson Sts. N.E., $525,000; Hayes Elementary School addn., 5 and K Sts. N.E., $1,000,000; Margaret Murray Washington Vocational High School addn., D St. between N. Capitol and 1 Sts. N.W., $1,900,000; Mann Elementary School addn., Newark St. between 44 and 45 Sts. N.W., $520,000; Seaton Elementary School replacement I St. between 2 and 3 Sts. N.W., $959,000; Stevens Elementary School replacement, vicinity of 21 K and L Sts. N.W., $1,200,000; all foregoing (1956 Budget); Junior High School in far northeast area, $2,750,000; Lafayette Elementary School addn., Broad Branch Rd. and Northampton St. N.W., $340,000; Harrison Elementary School addn., 13 and V Sts. N.W., $315,000; Garrison Elementary School addn., 12 St. between R and S Sts., $300,000 all foregoing (1957 Budget); elementary school in Kimball School Area, 31 St. between F and G Sts. S.E., $680,000; Merritt Elementary School replacement, 50 and Hayes Sts. N.E., $1,300,000; Eliot Junior High School addn., 18 and B Sts. N.E., $430,000 all foregoing (1958 Budget).

▲ **Ill., Elgin**—SCHOOL—Elgin Bd. Educ., 353 E. Chicago Av., plans by Elmer Gylleck & Assocs., 120½ S. Grove St., 1 story Oak Hills Grade School, $350,000; plans by LeRoy W. Thompson, 355 Congdon St., 1 story Gifford School addn., $900,000.

Ill., Great Neck—SCHOOL—School District 7, Great Neck, plans by Perkins & Will, 309 Jackson Blvd., Chicago, Zone 6, grade school, Clover Dr., $600,000.

▲ **Ind., Logansport**—SCHOOLS—City School Bd., Logansport, 3 schools, $1,500,000.

Me., Fort Fairfield—HOUSING—Fort Fairfield Housing Auth., c/o Bd. Selectmen, 79 Main St., plans by Arnold Perreton Assoc., 3 Capitol St., Concord, N. H., 50 housing units. $550,000. CD 4/8.

Me., Waterville—SCHOOL—City, City Hall, high school, $700,000.

Mass., Malden—SCHOOL—City, School Bldg. Comm., Mayor Fred Lamson, chn., City Hall, elementary school, $700,000. CD 11/17/48.

Mass., New Bedford—SCHOOL—State, Dpt. Educ., 200 Newbury St., Boston, plans by Thomas F. McDonough, 25 Huntington Ave., Boston, Contr. E-306, school for Mass. Textile Institute, Purchase St., $750,000. CD 2/8/51.

▲ **Mich., Ionia**—HOSPITAL—State, A. N. Languis, dir. State Bldg. Dpt., Lansing, brick, steel, concrete criminally insane unit at Ionia State Hospital, $2,000,000. CD 1/16/51.

▲ **Mich., Ypsilanti**—SCHOOLS—Bd. Educ., Ypsilanti, plans by R. S. Gerganoff, 206 N. Washington St., 2 story, bsmnt., brick, steel school, $500,000; brick, concrete George School addn., $350,000; 2 story, brick, steel elementary school, $450,000; 2 story, bsmnt., brick, steel elementary school, $400,000.

Minn., Owatonna—SCHOOL—Bd. Educ., Special School Dist. 1, Mrs. V. Hinderman, clk., voted $565,000 bonds Apr. 22, high school addn., Ellerbe & Co., E. 505 First National Bank Bldg., St. Paul, archts.

▲† **Mo., Independence**—ARSENAL—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., Lake City Arsenal, incl. warehouse bldgs., conversion of existing bldgs. $4,947,000.

▲ **Mo., Joplin**—SCHOOL—Bd. Educ., voted $1,500,000 bonds May 20, school constr. and imprvs. CD 5/6.

Mo., Warrensburg—DORMITORIES—Central Missouri State College, C. E. Muchmore, bus. secy. Warrensburg, plans by Neville, Sharp & Simon, 25 E. 12 St., Kansas City, Mo., 2 brick, rein.-con. dormitories, $700,000. CD 5/6.

Mont., Havre—SCHOOLS—Hill County School Dist. No. 16, voted $950,000 bonds, 2 elementary schools, imprv. existing schools.

N. Y., New York—HIGH SCHOOL—Bd. Educ., 110 Livingston St., Brooklyn, Zone 1, plans by Harry M. Prince, 101 Park Ave., Zone 17, altering Morris High School Boston Rd. and 166 St. $800,000.

N. C., Boone—SCHOOL—City, elementary school, $750,000.

▲ **N. C., Wadesboro**—SCHOOL—Anson Co. Bd. Educ., Wadesboro, bond election June 28, school imprvs., $1,250,000. CD 1/13/50.

▲ **O., Cuyahoga Falls**—SCHOOLS—Bd. Educ., Cuyahoga Falls, $2,300,000 bond election Nov. 4, elementary school, East side, $450,000; Junior High School, near Portage Tr. and 14 St., $1,650,000.

▲ **O., Painesville**—GENERATOR, etc.—City, City Hall, install 7,500 kw. generator to increase municipal electric plant capacity to 23,000 kw., $600,000; expand municipal power plant with installation of 250,000 lb. steam boiler and extend present boiler room, $695,310. H. Ralph Hadlow, Hipp Annex Bldg., Cleveland, consult. engr.

O., South Euclid—CITY HALL—City, City Hall, 1349 Green Rd. bond election Nov. 4, city hall, fire and police stations, service garage and storage shed. $500,000.

▲ **Okla., Tulsa**—HIGH SCHOOL—Bd. Educ., 410 S. Cincinnati St., voted bonds, Junior High School. $2,000,000. Leon Seuter, Philtower Bldg., archt. CD 5/14.

Pa., Irwin Twp.—SCHOOLS—Joint School Dist. of Irwin Twp., Victory Twp., plans by W. Holmes Crosby, 49 Maple Ave., Oil City, grade school, high school, brick, block backup, steel frame constr. $640,000.

▲ **Pa., Pittsburgh**—HOUSING—Pittsburgh Housing Auth., 605 City County Bldg., plans by Mitchell & Ritchey & Douden, 304-524 4th Ave., housing development, paving, sewers, water lines, playground and grading, Spring and Summer Hills. $1,913,000.

Pa., Seneca—HIGH SCHOOL—Joint School Dist. of Cranberry and Pine Grove Twp., Seneca, plans by Wm. Holmes Crosby, 49 Maple Ave., Oil City, 2 story, 2 wings 60x111 ft. and 60x60 ft., brick, tile high school addn. $800,000. CD 11/13/50.

▲ **Pa., Uniontown**—HOUSING—Fayette Co. Housing Auth., Uniontown, plans by Altman & Altman, 206 Derrick Ave., 100 family housing, Redstone Twp. $1,000,000. CD 11/29/45.

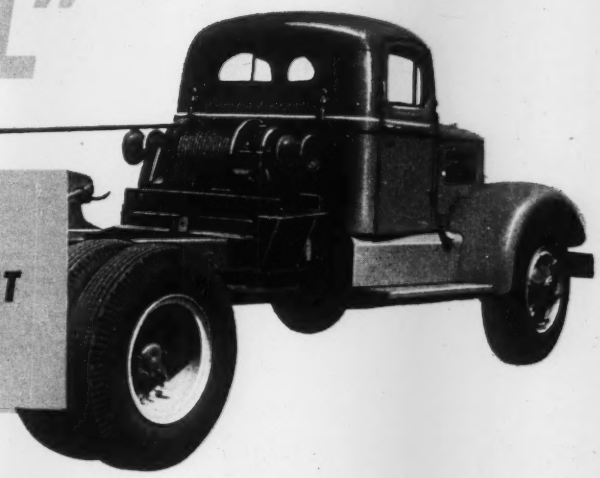
▲ **Pa., West Providence**—HIGH SCHOOL—Everett Southern Joint School Auth., R. D. Everett, plans by Buchart Eng. Corp., 611 Market St., York, 2 story Junior-Senior High School, athletic field and parking lot, $1,300,000.

▲ **R. I., Newport**—HOUSING—Newport Housing Auth., Newport, plans by Christopher D. Dutra, Berkeley Ave., Middletown, and Joseph C. Gray, 561 Boylston St., Boston, Mass. housing Broadway Sect. $1,000,000. CD 1/14.

(Continued on page 136)

"PULL"

THAT PULLS DOWN EQUIPMENT MOVING COSTS



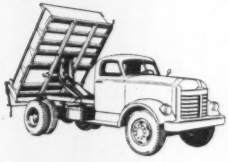
GarWood TRUCK WINCHES

They're tougher . . . last longer . . . pull more . . . safer to operate . . . require less maintenance. Gar Wood Winches have the "pull" not only to get more work done, but also to pull down costs. Their definite superiority has made them the preferred winches in all fields where truck winches are used.

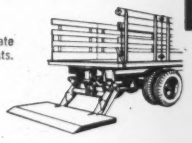
Drum shaft is oversize, made of heat-treated alloy steel. Worm gear is alloy phosphor gear bronze with amazing wear characteristics. Drum is high carbon steel casting. Worm shaft has oversize ball bearings which require no adjustment. An exclusive Gar Wood feature is the automatic safety brake. Self-energizing, it will stop and hold any load up to winch rating yet releases fully in hoisting direction, practically eliminating drag and wear.

Another Gar Wood exclusive feature is the flexible mounting which permits chassis frame to weave and twist without cramping or bending winch drum shaft or bellmouthing the bushings. Gar Wood Winches are run-in at the factory and load-tested by lifting actual weights.

Gar Wood builds better winches . . . the kind that are always a help, never a headache. Write for Bulletin . . . use the coupon—now.



Gar Wood Dump Bodies and Hoists handle larger payloads. Bulletin HB-304.



Gar Wood Elevating End-Gate cuts pick up and delivery costs. Bulletin L-101.

Gar Wood Load-Packer compresses a bigger load of refuse—reduces collection costs. Bulletin M60.

GAR WOOD INDUSTRIES

GAR WOOD INDUSTRIES, INC.

Wayne Division • EXECUTIVE OFFICES, WAYNE, MICH.

TRUCK EQUIPMENT: Dump Truck Bodies & Hoists, Winches & Cranes, Refuse Collection Bodies, Elevating End-Gates. CONSTRUCTION EQUIPMENT: Excavators, Scrapers, Dozers, Ditchers, Spreaders, Finegraders, Truck-Mounted Road Graders

52-15

Gar Wood Industries, Inc.
Executive Offices, 36219 Main St., Wayne, Michigan

Please send me Bulletin WC-204 explaining why Gar Wood Winches cut costs; also the other bulletins checked below.

☐ MSI Dump Body and D8R Hoist ☐ End-Gate Bulletin L-101
☐ Load-Packer Bulletin M60

Name_____ Title_____

Company_____

Address_____

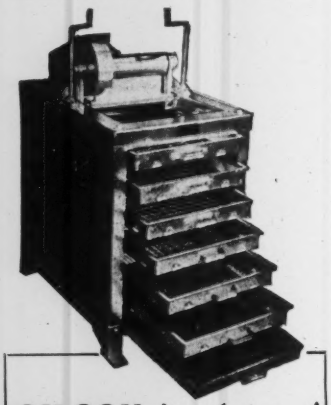
Compare the Brunson to any instrument you know. Brunson alone offers you *all* these advancements . . . the first major surveying instrument improvements during the past 50 years.

- Ball-Bearing Spindle Base
- Ball-Bearing Telescope Axis
- Permanently Lubricated Sealed Dustproof Bearings
- Tangent Adjustment Wobble Pin
- Completely Enclosed Leveling Screws

Precision surveying instruments
Transits, Levels, Rods, Tripods.

LASTING BRUNSON ACCURACY

BRUNSON INSTRUMENT COMPANY, INC.
1405 Walnut St. • Kansas City 6, Mo.



GILSON *Mechanical*
TESTING SCREEN
FOR FIELD or LABORATORY SERVICE

• This machine is designed for the efficient sizing of test samples. It takes samples up to one cubic foot and makes from two to seven separation simultaneously, in five minutes or less—For fast, accurate sizing of coarse or fines from 4" to 200 mesh specify a Gilson Testing screen.

GILSON SCREEN CO.
BOX 186 MERCER, PENNA.

(Continued from page 134)

▲† **Tenn., Chattanooga**—ORDNANCE WORKS—U. S. Eng., 303 Federal Office Bldg., Nashville, rehabilitating Volunteer Ordnance Works, incl. repairing plant, utilities roads, grounds, railroads, laboratories, shops, storage and admin. bldgs. $21,000,000.

▲ **Tex., Beaumont**—GRAIN ELEVATOR, etc.—Port of Beaumont, 180 Milam St., grain elevator, $2,000,000; four to five 150x840 ft. steel frame, galv. metal exterior warehouses, rein.-con. fdn., $750,000-$1,000,000; warehouse loading sheds, $350,000; new trackage on wharf apron, $250,000; docks, $500,000; concrete and piling apron and addnl. Port rehabilitation work, $400,000. George J. Schaumburg, American Natl. Bank Bldg., Beaumont, and Robert J. Cummins, 1028 Bankers Mortgage Bldg., Houston, consult. engrs. CD 1/17.

▲ **Tex., Denison**—HOTEL, etc.—Texas State Park Bd., c/o Planning Dept., State Bldg., Austin, resort hotel, $750,000; state park system, incl. swimming pools, cottages, playgrounds, athletic courts, amusements, etc. $3,000,000, 9 mi. northwest of here.

▲† **Tex., Houston**—GARAGE—Harris Co., Court House, 2nd auto parking garage, near county court house and jail. $1,000,000.

Utah, Salt Lake City—SURGICAL WING—Salt Lake Co., c/o L. A. Jones, comr., City and County Bldg., plans by Ashton, Evans & Brazier, 24 South West Temple St., surgical wing to Salt Lake County General Hospital. $750,000.

▲ **Wash., Seattle**—SCHOOLS—School District 1, 815 4 Ave. N., Northeast Elementary School, $800,000; Akli Elementary School addn., $375,000; Arbor Heights Elementary School addn., $300,000; Dunlap Elementary School addn., $300,000; Pacific Prevocational School addn., $400,000; Junior High School addn. to Queen Anne High School, $750,000; Junior High School addn. to Cleveland High School, $350,000; Meany Junior High School addn. $650,000.

Wash., Seattle—SCHOOL—School Dist. 1, 815 4 Ave. N., plans by John Graham & Co., Dexter Horton Bldg., Zone 4, elementary school, near Olympic View golf course in northwest part of city $750,000. CD 5/22.

▲ **Alaska, Anchorage**—HIGH SCHOOL—City, City Hall, election June 10 on sales tax to finance high school. $4,000,000. CD 5/16.

Alta., Edmonton—POWER PLANT—Municipality power plant addn. and modernization, $510,000. J. D. A. MacDonald, City Hall, city engr. CD 4/9.

Ont., Pentanguishene—HOSPITAL—General Hospital Bd., 38 Robert St., E., hospital addn., Harriett St., $500,000.

COMMERCIAL BUILDINGS

▲ **Ill., Chicago**—APARTMENT—Donald Easter, agent, 10 S. La Salle St., Zone 3, plans by Christopher Chamales, 11 S. La Salle St., Zone 3, 60 unit apartment, garages, 1338-40 North State St., Chicago, Zone 10, $1,000,000. Shaw, Metz & Dolio, 208 S. La Salle St., Zone 4, assoc. archts.

▲ **Ill., Chicago**—STUDENT UNION BLDG.—Illinois, Institute of Technology, 33 and Federal St., student union bldg. 33 and Dearborn Sts. $1,000,000. CD 12/1/47.

Ill., Chicago—APARTMENT—Edwin T. Maynard, 969 Hill Rd., Winnetka, plans by Andrew N. Rebori, 150 N. Wacker St., Zone 6, 45 story co-operative apartment. $750,000.

Ind., Richmond—CHURCH—Central Methodist Church, Richmond, plans by Ralph R. Orr, 265 Oakland Park Columbus, O., church. $500,000. CD 8/13/45.

Minn., Minneapolis—OFFICE—Lutheran Brotherhood J. A. Preus, chn., Bd. Directors, 608 Second Ave. S., 2 or 4 story office, 7 St. and Third Ave. South, $800,000-$1,500,000.

Miss., Jackson—CHURCH—First Baptist Church, 430 N. President St., plans by N. W. Overstreet & Assoc., 201 N. Lamar St., J. M. Spain, Deposit Guaranty Bank Bldg. and Dudley White, First Federal Savings & Loan Bldg. Annex, church addn. $750,000.

▲ **Mo., Clayton (St. Louis 5, P.O.)**—SHOPPING CENTER—Stix, Baer & Fuller Co., Arthur B. Baer, pres., 601 Washington Ave., St. Louis, Zone 1, plans by John Graham & Co., Dexter Horton Bldg., Seattle, Wash., shopping center, incl. 4 story, bsmnt. bldg to be used by department store, also bldgs. to house some 60 other stores and shops, parking facilities, Clayton Rd. westward from Brentwood Blvd. on tract about 660x730 ft. $8,383,700. CD 6/16/50.

▲ **N. J., Paramus**—SHOPPING CENTER—Allied Stores Corp., 401 Fifth Ave., New York, N. Y., plans by John Graham & Co., 11 W. 42 St., New York 18, N. Y., shopping center, Route 4. $17,300,000.

▲ **N. J., Paramus**—SHOPPING RETAIL CENTER—L. Bamberger & Co., 131 Market St., Newark, N. J., plans by Abbott, Merkt & Co., 10 E. 40 St., New York, 17, N. Y., shopping retail center, on 125 acre site at Routes 4 and 17. $5,000,000.

▲ **N. Y., New York**—OFFICE—Metropolitan Life Insurance Co., 1 Madison Ave., Zone 10, plans by Lloyd Morgan & Eugene V. Meroni, 119 E. 40 St., Zone 17, 13 story office bldg., E. 23 and 24 Sts., and Madison and Fourth Aves. $23,200,000.

N. C., Wilmington—STORE—Sears, Roebuck & Co., Ponce Le Leon Ave., Atlanta, Ga., retail store. Approx. $500,000.

O., Beachwood—HOUSES—A. Siegler & Sons, 4923 Lee Rd., Cleveland, Zone 28, 20 houses, Fernway Rd. $540,000. Zoltan Schlesinger, c/o owner, engr.

▲ **O., Bedford**—SHOPPING CENTER and HOUSING—Jacob Hecht Realty Co., 850 Euclid Ave., Cleveland, Zone 14, 16-unit shopping center and 70-home housing, Northfield Rd. near Solon Rd. $2,250,000.

▲ **O., Parma**—HOUSING—Pearl-Green Realty Co., 7511 Jeffries Ave., Cleveland, 300 frame, ranch-type houses, **Klusner Ave.,** Center, Park and Stanfield Drives. $4,000,000. Sherwood Greenfield, c/o owner, engr.

Pa., Mollenauer—OFFICE, etc.—Manufacturers Heat & Light Co., Union Trust Bldg., Pittsburgh, plans by John J. Reitz, 421 Market St., Steubenville, O., 3 or 4 story, 122x321 ft., bsmnt., brick office bldg. and service center. $500,000.

Pa., Pittsburgh—CLASSROOM—Penssylvania College for Women, Woodland Rd., plans by Ingham, Boyd & Pratt, 1211 Empire Bldg., 2 story bsmnt., steel, brick on tile classroom bldg. $975,000. CD 2/9/49.

▲ **Tex., Austin**—HOSPITAL—St. David's Hospital, 606 W. 17 St., 100 or more bed capacity hospital unit. $1,420,000.

▲ **Tex., San Antonio**—DEPARTMENT STORE—Sears, Roebuck & Co., Romana Plaza, plans by Bartlett Cocke, 3501 Broadway, department store, Pleasanton Rd. and S. W. Military Dr. $1,742,400. CD 5/23.

▲ **Alaska, Anchorage**—HOUSES—Alaska Associates, Inc., Anchorage, 125 houses in Airport Heights area. $2,000,000.

▲ **Ont., Bala**—HOTEL—Royal Muskoka Hotel, 80 King St. W., Toronto, hotel, on Lake Rosseau, $1,500,000.

INDUSTRIAL BUILDINGS

Ala., Montgomery—WAREHOUSE—Durr Drug Co., 209 Commerce St., warehouse, $500,000. CD 11/23.

▲ **Conn., Middletown**—POWER PLANT—Hartford Electric Light Co., 266 Pearl St., Hartford, power plant Laurel Section between River Rd. and Connecticut River $14,000,000. Stone & Webster Corp., 49 Federal St., Boston, Mass., consult. engrs. CD 6/14.

▲ **Ind., Covington**—PLANT—Olin Industries, Alton, Ill., celophane plant on 665 acre site. $20,000,000. CD 5/26.

▲ **Minn., Crookston**—FACTORY—American Crystal Sugar Co., Boston Bldg., Denver, Colo., beet sugar factory. $8,000,000.

▲ **Mo., Joplin**—PLANT—Thurston Chemical Co., Wm. R. Thurston, pres., 102 Wall St., fertilizer plant addn. $2,500,000.

▲ **Neb., North Platte**—PLANT—Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y., nitrogen plant. $25,000,000.

▲ **N. C., Raleigh**—PLANT—Westinghouse Electric Corp., Meter Div., 95 Orange St., Newark, N. J., 1 story, 500 sq. ft. steel, brick meter mfg. plant, U. S. Rt. 1, near here. $5,000,000. Robert & Co. Assoc., 96 Poplar St., N. W., Atlanta, Ga., consult. engrs.

▲ **Pa., Washington**—WAREHOUSE, etc.—Manufacturers Light & Heat Co., Union Trust Bldg., Pittsburgh, plans by John J. Reitz, 421 Market St., Steubenville, O., 1 story, brick, block, steel, warehouse-service bldg. $1,500,000.

Tenn., Chattanooga—PLANT—Combustion-Engineering Superheater, Inc., W. Main St., plans by Selmon T. Franklin, 421 Poplar St., plant addns. Approx. $500,000. CD 4/30.

▲ **Tenn., Gallatin**—FACTORY—Yale & Towne Mfg. Co., 405 Lexington Ave., New York 17, N. Y., 80,000 sq. ft. lock and hardware factory, Park Ave. $1,000,000.

Tenn., Memphis—PLANT—Quaker Oats Co., 1526 Ragan Ave., 2½ story, 50x76 ft., concrete, steel alcohol unit plant. $600,000.

Tex., Dallas—WAREHOUSE—Trammell Crow, 3600 Armstrong St., warehouse. $850,000.

▲ **Tex., Paris**—PLANT—Babcock & Wilcox Co., Paris, production of parts for power boilers. $2,271,000.

Tex., San Antonio—WAREHOUSE—A. B. Frank Co., Merchants Bldg., warehouse, $553,455.

▲ **Utah, Salt Lake City**—REPAIR SHOP, etc.—Electro-Motive Div., General Motors Corp., LaGrange, Ill., diesel repair shop and parts warehouse, $600,000, equip. approx. $900,000.

▲ **Ont., Toronto**—PLANT—International Business Machines Co., Ltd., Don Mills Rd., 2 story, 140x600 ft., 308,000 sq. ft., steel, glass block, brick plant extension with factory and engineering offices 50 acre site. $2,000,000.

UNCLASSIFIED

Ill., Chicago—PAVING—Chicago Park Dist., 425 E. 14 St., Zone 5, paving, wid'n. Yates Ave. from 71 St. to South S. Chicago Ave. $650,000. CD 4/30/45.

▲ **Kentucky**—RURAL DISTRIBUTION LINES—Pennyrile Rural Electric Co-operative, Hopkinsville, 147 mi. rural distr. lines, headquarters, facilities, sys. imprvs., Todd Co. $1,460,000.

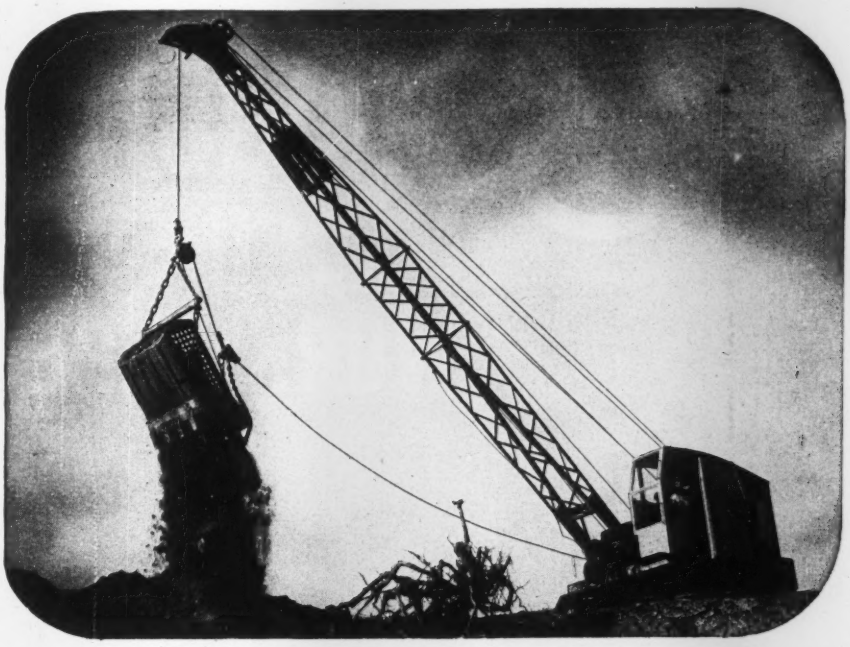
▲ **North Carolina and South Carolina**—GAS LINE—Carolina Natural Gas Corp., Wilder Bldg., Charlotte, N. C., 40 mi. gas lines from Kings Mountain, N. C., to Rock Hill, S. C. $3,150,000.

▲ **Texas, New Mexico, Arizona, California**—OIL PIPE LINE—Progress Pacific Pipe Line Co., 530 W. 6 St., Los Angeles, Calif., 24 in. welded joint crude oil pipe line, $79,000,000. Ford, Bacon & Davis, Inc., 39 Broadway, New York, N. Y., consult. engr. CD 7/6.

▲ **Tex., Dallas**—RECREATION and PARKING—First Baptist Church, 1020 Lamar St., 8 story recreation and parking. $1,000,000.

▲ **Wash., Seattle**—SWIMMING POOL, etc.—Park Bd., 100 Dexter Ave., swimming pool at Golden Gardens Beach, $320,000; landscaping and beach development at Golden Gardens, $60,000; paving parking areas and other imprvs. at Carkeek Park, $150,000; bulkhead and wid'n. blvd. at Mt. Baker Park $230,000; development of beach at Seward Park, $175,000; parking areas at Pritchard Beach and Atlantic City Park, $125,000; swimming pool and development of shore line at Green Lake, $600,000. CD 4/9/45.

WIRE ROPE



This is the most economical rope we've ever made for construction equipment

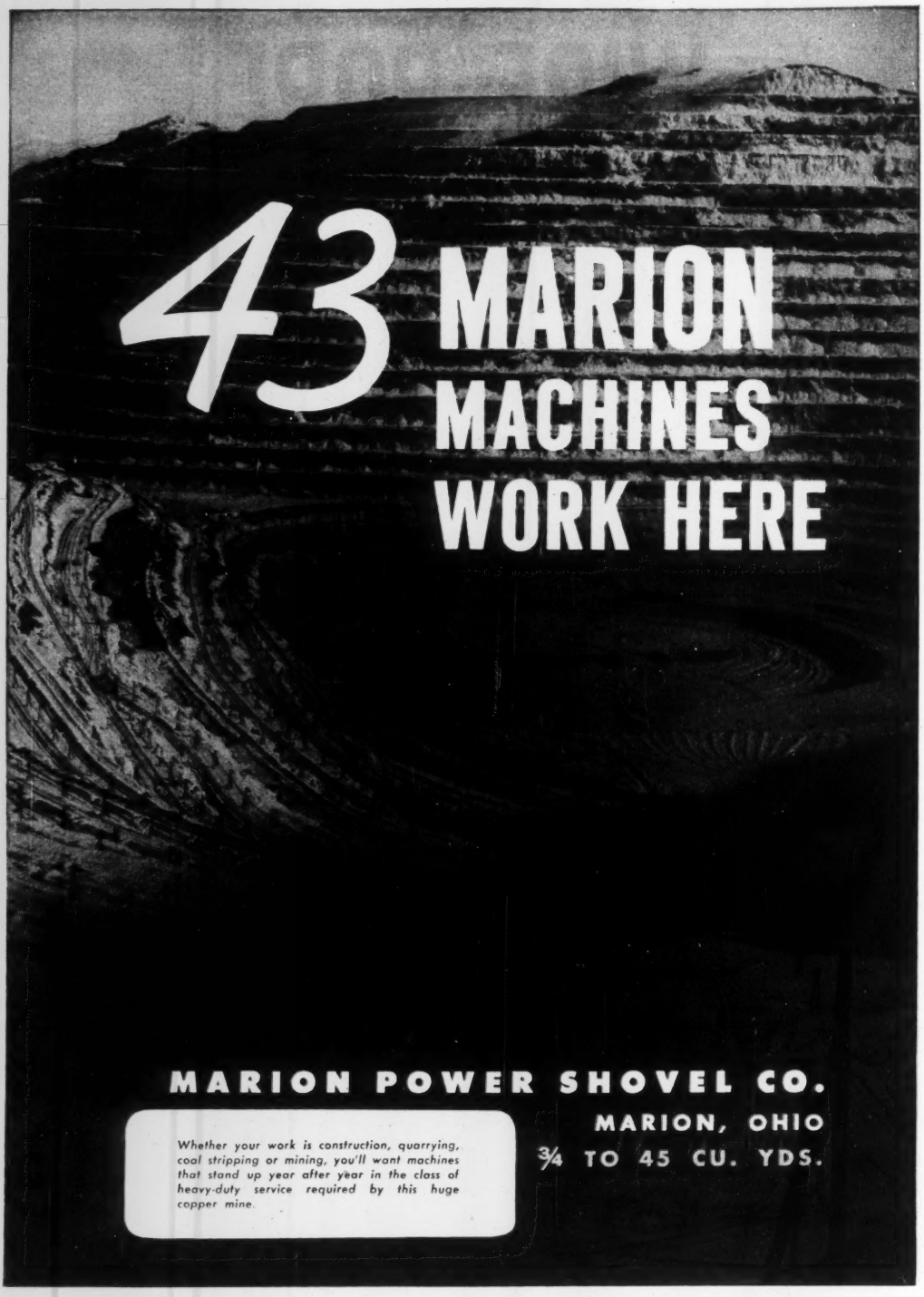
ROEBLING is the best known name in wire rope. That's partly because we were the first wire rope maker in America. But more than that, we've always led in developing better wire and better rope for every purpose.

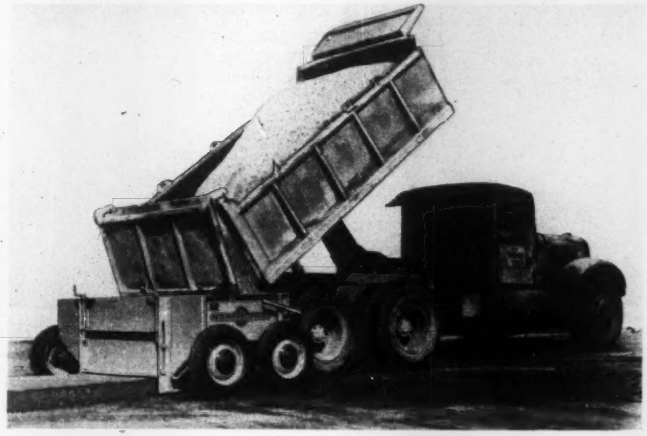
Today's Roebling Preformed "Blue Center" Steel Wire Rope is the best choice for efficiency and long life on excavating and construction equipment. This rope has *extra* resistance to crushing and abrasion . . . stands up under rough going. It saves you time and cuts costs.

There's a Roebling wire rope of the right specification for top service on any job. Call on your Roebling Field Man for his recommendations. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

ATLANTA, 934 AVON AVE • BOSTON, 51 SLEEPER ST • CHICAGO, 5525 W. ROOSEVELT RD • CINCINNATI, 3253 FREDONIA AVE • CLEVELAND, 701 ST. CLAIR AVE, N. E. • DENVER, 4801 JACKSON ST • DETROIT, 915 FISHER BLDG • HOUSTON, 6216 NAVIGATION BLVD • LOS ANGELES, 5340 E. HARBOR ST • NEW YORK, 19 RECTOR ST • ODESSA, TEXAS, 1920 E. 2ND ST • PHILADELPHIA, 2301 VINE ST • SAN FRANCISCO, 1740 17TH ST • SEATTLE, 900 1ST AVE S. • TULSA, 321 N. CHEYENNE ST • EXPORT SALES OFFICE, TRENTON 2, N. J.


43 MARION MACHINES WORK HERE
MARION POWER SHOVEL CO.
MARION, OHIO
¾ TO 45 CU. YDS.
Whether your work is construction, quarrying, coal stripping or mining, you'll want machines that stand up year after year in the class of heavy-duty service required by this huge copper mine.



Spreader box measures materials

There's a growing trend on the part of engineers designing airports and roads to specify that dumped materials must be measured. In answer to this, Wood Manufacturing Co. has come up with a new spreader box designed for measuring and forming stabilized base, roadmix or hotplant materials into uniform windrows. The four-wheeled unit attaches directly to a dump truck, as shown here, and measures materials as the truck moves along. Select or imported material flows from the truck through the screw-lifting, adjustable gate of the spreader box and out on the base in one operation. Windrow capacities up to 8 cu ft are controlled by the adjustable tail gate. According to the manufacturer, the Wood spreader box saves straightening up dumped materials which are unmeasured and eliminates guesswork by assuring controlled quantities of materials. Wood Manufacturing Co., PO Box 620, 6900 Tujunga Avenue, North Hollywood, California.

New one-man saw is hydraulic-powered

Here's a new one-man saw that's hydraulically-operated. Known as the Hydra-Flex, its hydraulic head transmits up to 12-brake horsepower from a heavy duty Von Ruden hydraulic pump that fits the power take-off of any convenient tractor, jeep or truck. A safety by-pass valve protects the operator and the saw if pinched or crowded beyond its reportedly tremendous cutting capacity. Weight of the saw and power head is only 30 lbs.

The one-man Hydra-Flex is manufactured in 18, 24 and 30 in. sizes. With easy attachment of a handy helper's handle, the larger two are quickly converted to two-man saws. The 32-in. and the 46-in. two man Hydra-Flex saws complete the company's line of hydraulically operated saws. Greater cutting capacity utilizing power already available to lower first cost and greater flexibility are advantages claimed by the manufacturer. Von Ruden Mfg. Co., Claremont, Minn.

Cinder crusher developed for highway departments

A 3-roll cinder crusher developed for the Iowa State Highway Department is now available. Size of material produced is said to be ideal for traction on hills and curves and to reduce skidding at crossings. Power plants also can use it to render cinders marketable. The crusher will reduce them to a size suitable for use in cinder concrete block plants.

The unit is said to produce 15 tons of minus ¾-in. and up to 50 tons of minus ¾-in. crushed cinders per hr. The third crusher roll accomplishes preliminary reduction and directs the partially crushed material into the other two rolls. Rolls are of spring release type and pass hard foreign material without damage. Gears are of heavy duty semi-steel. Eagle Iron Works, 129 Holcomb Ave., Des Moines, Iowa.

Castell
drawing pencil of the Masters
EXCLUSIVE, Yes!
191 years of priceless experience go into the making of the world's finest drawing pencil.
EXPENSIVE, No!
Ordinary drawing pencils and refill lead have gone up so much in price that CASTELL stands out as an extraordinary value. Now you can use the premium pencil—the world's best—at no extra cost. Order from your Dealer today.
Sharper, clearer and more blueprints from CASTELL tracings.
USA AWFABER CASTELL 9000 2H
AWFABER CASTELL LOCKTITE U.S.A. 2H
CASTELL DRAWING RETOUCHING REFILL LEAD
IMPORTED FROM AMERICAN ZONE
LOCKTITE
The original push button holder with bulldog lead grip.
CASTELL
the drawing pencil with the Master Degrees
A.W. FABER-CASTELL
PENCIL COMPANY, INC., NEWARK, N. J.

COMMENT
from the
BUTLER ENGINEER

Angelic Automatic Batcher Has Wings

A couple of months ago I told you about a terrific new baby born at Butler Bin — a highly complex, interlocked, completely automatic, mistake-proof, push-button control panel for batching 7 materials.

Now that baby has a brother. I know — I know! Nine months is the gestation period but we work miracles at Butler Bin — and nothing premature, either. Maybe we should change our name to Dionne Bin Co., un-Ltd.

But the baby's an angel. Actually has wings. He's built like this ⌓ instead of straight-away like this ▭. The wing design saves the operator many steps, saves space, speeds up work.

The baby's designed to batch ferrous ores of various kinds to stew up alloys. You can get an idea of the accuracy problem when I tell you that some of the ore chunks are big as Joe Louis' two fists — with the gloves on.

I was talking with a contractor on an earth fill job. Great trouble getting the specified density. Wrong type of soil. A salesman came in with a new kind of roller. At the end of his sales talk he said, "Mister, this roller'll give you 100% density."

"Sonny," said the contractor. *"The only 100% density I know about is when I've had too many martinis, a platter of french fries and a steak two inches thick!"*

And that goes double for —

The Butler Engineer

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

Ditcher can be operated by farm tractor

Here's a ditcher that's trailer mounted and operated by direct drive from a tractor power takeoff. It's handled by the tractor operator from his seat and quickly connects and disconnects with the takeoff and drawbar. It can dig from 10- to 14-in widths and up to 6 ft deep. The "POW-R-DITCHER", as it is called has a series of long-wearing cutting blades mounted on heavy roller chain. These blades are easily removed for sharpening or replacement. The belt conveys spoil to the side of the ditch. No additional attachments are needed, according to the manufacturer, and the rig has been used successfully for tiling; laying pipe, gas, water and sewage lines; and for digging foundation trenches. VERMEER MANUFACTURING CO., PELLA, IOWA.

High heat resistance in new lubricant

Excellent performance in both extremes of heat and cold, high resistance to water and anti-corrosiveness are three advantages of a new multi-purpose industrial lubricant—Sotol—announced recently.

After extensive laboratory and field tests it has retained its lubricating powers and has not melted or run even at a temperature of 1000 F. Sotol likewise has demonstrated virtual immunity to destructive emulsification and washing away by water and the capacity to forestall corrosion of surfaces.

According to the manufacturer, Sotol lubricates moving parts adequately at low temperatures at which many lubricants are so viscous or thick that they do not adhere properly to moving parts. Accordingly, it may be applied during cold weather without heating of grease guns. Because of its high resistance to water it is especially valuable to lubricate parts exposed to rainfall or subjected to moisture condensation. It is packed in units of 40, 110, 235 and 435 lbs by SOUTHWESTERN PETROLEUM COMPANY, FORT WORTH, TEX.

Another diesel pile hammer offered by Syntron

A self-contained diesel pile hammer had joined the Syntron line. Identified as No. 3000 DPH and operating on diesel principle the hammer does not require auxiliary power such as air compressors or steam boilers. The force of each blow is remotely controlled by the operator—from non-impact idling to full power—through a hydraulic system. The hammer can be handled easily by crane or furnished complete with rig, leads and hoist engine to drive sheet steel, timber or concrete piling. It operates at 110 blows per minute and its 1,200-lb ram delivers 3,000 ft-lb per stroke. It's 9 ft long, 18 in. wide, fits 18½-in. leads and weighs 3,000 lb. SYNTRON COMPANY, 328 LEXINGTON AVENUE, HOMER CITY, PENNSYLVANIA.

"Wafer" motor is air cooled and totally enclosed

A new motor, featuring an exceptionally short overall length, is ideally suited to applications requiring a totally enclosed air cooled unit with flat design. Available in ratings from 1/20th through 5 hp and in speeds from 450 to 3,600 rpm (single phase or polyphase), it's known as a wafer motor.

An example of this unit's value is quickly apparent on ventilating and air moving installations where the

motor itself is to be mounted within the piping or vent. The unique frame design permits mounting by means of "ears", drilled and tapped holes in endbells, or by any other special requirement of the user. It can be mounted in any position, shaft up or down and when mounted in this manner, the fan can be connected directly to the motor's output shaft, eliminating the usual pulleys, belts, brackets and fan shaft. REULAND ELECTRIC COMPANY, ALHAMBRA, CALIF.

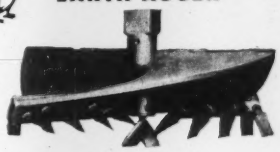
Multiple-shot blasting unit is foolproof

Improved firing action, safety and dependability are said to be incorporated in a new multiple-shot blasting unit that has approval of the U. S. Bureau of Mines (#1608). Measuring only 2½ x 2¼ x 4¾, it is carried on a snap-on belt clip. The wiring circuit is completely insulated from the battery container to preclude accidental firing and since the unit is capacitor-operated, a full charge is dissipated with each shot, eliminating misfires.

In the accompanying photo the battery container is shown hanging on the belt clip. Next to it is the firing plug with a push-button on the left hand side, and attached to it with a chain is a firing plug guard. To set off a blast the operator inserts his lead wires into two holes in back of the firing plug, depressing the push-button at the same time. When he releases the button the wires are snugly held by spring-loaded retainers. The operator then inserts the firing plug into the battery container and presses firmly to make contact. He holds it firmly until a small neon light glows at the top of the case, indicating a full charge in the capacitor. Release of the firing plug then sends high

THESE PENGO PRODUCTS SAVE YOU MONEY!

THE PENGO EARTH AUGER



★ Twin helix—no back thrust!

★ Bores true, clean holes in any soil, most sandstones and hardpans, frozen ground, permafrost!

★ All wearing parts replaceable on job!

★ Made in 15 sizes, 10" to 54" hole diameters, to fit all makes of heavy-duty earth boring machines. Larger sizes on order.

THE PENGO CUTTING HEAD

★ Easy installation—welds to your present helix.

★ Bores where you never could before!

★ Wearing parts are replaceable on the job and are interchangeable with PENGO Auger parts. *(Described at left.)*

★ Made in 9 sizes, 8" to 24" diameters. Larger sizes on order.

THE PENGO WISDOM TOOTH

★ All PENGO Augers and Cutting Heads are equipped with the drive-on PENGO Wisdom Tooth, specially designed for use on earth augers; cast from special abrasion and shock-resistant steel alloy for *far* longer service life!

"Get the PENGO WISDOM TOOTH— It knows how to bore holes!"

ORDER TODAY—OR SEND FOR LITERATURE, PRICES

PETERSEN ENGINEERING CO.

MANUFACTURERS

SANTA CLARA, CALIFORNIA

Here's your BUCKET-SAVER BOOKLET

40 PAGES OF USABLE INFORMATION including complete details about . . .

HOW TO SAVE YOUR BUCKET

Among the many "bucket saver" suggestions are a list of "do's" and "don'ts" on the use and abuse of clamshell buckets; tips on how to prolong cable life; common operating mistakes that make bucket lips bow in or bend out.

HOW TO GET THE MOST FROM YOUR BUCKET

"How to Reeve the Bucket for Maximum Efficiency" is illustrated and described in detail. One page is devoted to instructions for operators.

HOW TO REPAIR BUCKETS

Methods of renewing the cutting edges of worn bucket lips include special welding precautions. This section contains instructions for removing and replacing ball bearings in lever arm sheaves, lubrication instructions, and many other practical hints for care and maintenance of clamshell buckets.

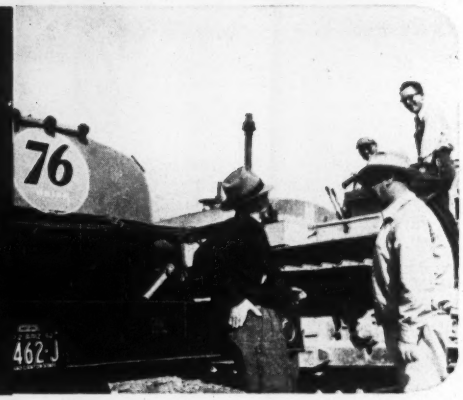
SEND FOR BULLETIN 2373 TODAY

BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
2076 Farmers Bank Bldg. • Pittsburgh 22, Pa.
New York • Chicago • Philadelphia • Birmingham • Washington • San Francisco

BLAW-KNOX CLAMSHELL BUCKETS
THE MOST COMPLETE RANGE OF SIZES AND TYPES

"Over-all maintenance costs are held to a minimum with T5X"

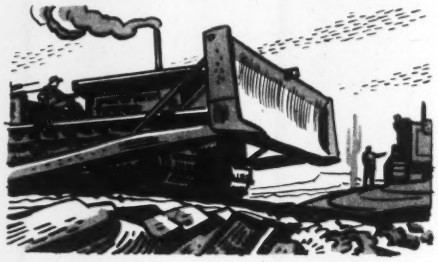
says Arizona Contractor



W. J. HENSON, contractor in Prescott, Ariz., uses Union Oil products in 117 pieces of construction equipment. Mr. Henson writes: "We have been particularly pleased with Union's success in recent years in reducing the number of petroleum products required to serve many needs. We are convinced our over-all maintenance costs are held to a minimum by the use of all-purpose T5X motor oil . . ."

Construction men throughout the U.S. find that T5X motor oil protects *every* type of internal combustion engine in all industrial operations. This outstanding versatility is possible because T5X is a combination of fortifying additives and 100% pure paraffin-base stocks found in no other motor oil.

T5X meets and exceeds the rigid Army specifications for a heavy-duty oil. This amazing *purple* oil minimizes ring sticking, sludge, lacquer and gum formation. T5X also reduces oxidation, retards carbon formation, and keeps precision-fitted moving parts covered with a protective film at all times.



Developed by the manufacturers of UNOBA—the industry's original multi-purpose grease

OFFICES

Los Angeles, Union Oil Building — Chicago, 1612 Bankers Building — New York, 4904 RCA Building
New Orleans, 917 National Bank of Commerce Building — Cincinnati, 2111 Carew Tower Bldg.

UNION OIL COMPANY OF CALIFORNIA 76

voltage through the leads to detonate the charge. MINE SAFETY APPLIANCES CO., BRADDOCK, THOMAS & MEADE STREETS, PITTSBURGH 8, PA.

Dril-Jak is multi-purpose mechanical pressure tool

Anyone who's wrestled with an electric drill, especially on overhead work, will appreciate the latest attachment which not only holds the tool in correct alignment but can exert a force behind it up to 2,000 lb. The mechanical friction grip action of the tool works like a simple lifting jack to force the drill motor ahead. An instantaneous pressure release works from the lift handle, providing one-hand control. It will fit any standard drill motor with ½-in capacity or larger, is 34½ in. long and has a maximum lift of 30 in. Extension pipes with adapters can be added to a maximum of 30 ft so that pressure can be applied against floor, wall, ceiling, posts, etc. Pressure pads for pipe end and shank end distribute pressure over greater areas when drilling, pushing, shoring, bracing, etc. In the photo above a worker straddles the fingers of a fork lift truck, places the base of his Dril-Jak on one finger and drills overhead, forcing ¾-in. holes in bottom of ⅝ in. steel beams. TIME SAVER TOOL CO. INC., 879 ADDISON RD., CLEVELAND 3, O.

ADVERTISERS IN THIS ISSUE

Acker Drill Co. ... 123
Aetna Casualty & Surety Co., The ... 128
Allis-Chalmers Mfg. Co. ... 8, 9
American Bitumuls & Asphalt Co. ... 61
American Hoist & Derrick Co. ... 92, 93
American Trailer Co., Inc. ... 130
American Tubular Elevator Co. ... 52
Atlantic Steel Corp. ... 119
Austin-Western Co. ... 63
Autocar Co., The ... 80

Bayley Co., The William ... 5
Besser Mfg. Co. ... 79
Bethlehem Steel Co. ... 1
Blaw Knox Div., Blaw Knox Co. ... 141
Broderick & Bascom Rope Co. ... 4th Cover
Brunson Instrument Co. ... 136
Bucyrus-Erie Co. ... 58, 59, 101
Builders-Providence, Inc. ... 128
Butler Bin Co. ... 140
Butler Mfg. Co. ... 129

California Welding & Blacksmith Shop, Inc. ... 130
Carver Pump Co. ... 78
Casey & Case Foundation Co. ... 124
Celotex Corp., The ... 77
Cement Gun Company ... 100
Cleco Div., Reed Roller Bit Co. ... 99
Cleveland Trencher Co. ... 72
Complete Machinery & Equipment Co. ... 55

Dex Safety Trimmer ... 123
Dixon Valve & Coupling Co. ... 70
Dodge Corp., F. W. ... 122
Dodge Div., Chrysler Corp. ... 42
Du Pont de Nemours & Co., Inc. Finishes Div. ... 91
Du Pont de Nemours & Co., Inc. ... 125

Earle Gear & Machine Co. ... 94

Faber-Castell Pencil Co., A. W. ... 139
Fenestra Building Products ... 37
Flint Steel Corp. ... 123
Franki Foundation Co. ... 118

Gar Wood Industries, Inc., Wayne Div. ... 135
Gateway Engrg. Co. ... 33
General Electric Co. ... 2nd Cover
General Electric Co., Electronics Dept. ... 53
General Tire & Rubber Co. ... 10
Gilson Screen Company ... 136
Gledhill Road Machinery Co. ... 52
Griffin Wellpoint Corp. ... 124
Grinnell Company, Inc. ... 67
Gunite Concrete & Construction Co. ... 84

Harnischfeger Corp. ... 4
Hayward Co. ... 128
Heltzel Steel Form & Iron Co. ... 62
Hose-McCann Telephone Co., Inc. ... 120

Indiana Gunite & Construction Co., Inc. ... 118
Inland Steel Co. ... 18
International Harvester Co. ... 54
Intrusion-Prepakt, Inc. ... 41

Jaeger Machine Co. ... 74, 75
Johns-Manville Corp. ... 73

Keashev & Mattison Co. ... 45
Keuffell & Esser Co. ... 82, 83
Krueper Co., H. J. ... 94

La Crosse Trailer Corp. ... 60
Lamson & Sessions Co. ... 133
LeTourneau, Inc., R. G. ... 14
Lewis & McDowell, Inc. ... 117
Link Belt Co. ... 38
Longyear Co., E. J. ... 122

M & H Valve & Fitting Co. ... 100
Macomber, Inc. ... 88
Madsen Iron Works, Inc. ... 120
Marion Power Shovel Co. ... 138
Masonite Corp. ... 56
Maxon Construction Co., Dumpcrete Div. ... 121
McKinney-Drilling Co. ... 120
Merritt-Chapman & Scott Corp. ... 68
Minneapolis-Moline ... 71
Motorola, Inc. ... 46

Nelson Stud Welding Div., Morton Gregory Corp. ... 126

Onan & Sons, Inc., D. W. ... 97
Ozalid Products Div., General Aniline & Film Corp. ... 64

Peerless Pump Div., of Food Machy. Corp. ... 95
Petersen Engrg. Co. ... 141
Phoenix Bridge Co. ... 118
Pittsburgh Corning Corp. ... 81
Plasteel Products Co. ... 119
Powder Power Tool Corp. ... 85

Ramset Fasteners, Inc. ... 15
Raymond Concrete Pile Co. ... 3rd Cover
Robertson Co., H. H. ... 65
Rockford Clutch Div., Borg-Warner ... 84
Roebling's Sons Co., John A. ... 137

Sauerman Bros., Inc. ... 118
Servicised Products Company ... 69
Sisalkraft Co. ... 66
Smith Co., S. Morgan ... 3
Smith & Co., D. B. ... 69
Spencer, White & Prentis, Inc. ... 128
Sprague & Henwood, Inc. ... 84
Standard Dry Wall Products ... 50
Stang Corp., John W. ... 98
Sterling Div., White Motor Co. ... 20
Symons Clamp & Mfg. Co. ... 132

Termite Drills, Inc. ... 117
Timber Structures, Inc. ... 13
Timken-Detroit Axle Co. ... 11
Timken-Detroit Axle Co. ... 12
Torrington Co., Bantam Bearings Div. ... 57
Tousey Varnish Co. ... 7
Trailer Village, Inc. ... 122

Union Oil Co. ... 142
Union Metal Mfg. Co. ... 6
U. S. Steel Supply Co. ... 127
Universal Form Clamp Co. ... 96

Viber Co. ... 89

West Lumber Co., L. U. ... 122
Westinghouse Electric Corp. ... 86, 87
Wild Surveying Instrument Supply Co. of Amer., Inc., Henry ... 2
Wisconsin Motors Corp. ... 98
Worthington Pump & Machinery Corp. ... 16

Yeomans Brothers Co. ... 90

Professional Services . . 102, 103, 104

SEARCHLIGHT SECTION

(Classified Advertising)
H. E. Hilty, Mgr.

Employment
Positions Vacant ... 104, 105
Selling Opportunities Offered ... 105
Positions Wanted ... 106
Part Time Work ... 106
Employment Services ... 105

Educational
Books ... 106
Schools ... 106
Tutoring ... 106

Business Opportunities
Offered ... 106

Notices
Auction ... 106
Proposal ... 113, 114, 115

Property
For Sale ... 106

Equipment
(Used or Surplus New)
For Rent ... 106
For Sale ... 106-112
Piling ... 110
Pipe ... 112
Rail ... 112
Surveying Instruments ... 106

Wanted
Equipment ... 106

ADVERTISERS INDEX ... 104

ENGINEERING NEWS-RECORD

D. S. ROBERTSON, *Adv. Sales Manager* — HOWARD T. OLSEN, *Assistant Manager*

J. G. JOHNSON, *Business Manager*

Sales Representatives: M. J. Storz and E. A. Callahan, Jr., 330 W. 42nd St., *New York;* F. G. Hudson, L. H. Hunt, W. G. Payne, 520 N. Michigan Ave., *Chicago;* R. E. Dorland, 68 Post St., *San Francisco;* A. B. Cozzens, 17th & Sansom Streets, *Philadelphia;* E. E. Duff, Jr., Hanna Bldg., *Cleveland;* B. F. Horn, Penobscot Bldg., *Detroit;* W. F. Donnell, Continental Bldg., *St. Louis;* H. L. Keeler, 1111 Wilshire Bldg., *Los Angeles;* R. C. Maultsby, Rhodes-Haverty Bldg., *Atlanta;* James Cash, First National Bank Bldg., *Dallas. Other Sales Offices:* 738-39 Oliver Bldg., *Pittsburgh;* 1427 Statler Bldg., *Boston;* Aldwych House, *London.*

EDITORIALS

Shyness on house builders' warranties

WITHOUT DOUBT, the directors of the National Association of Home Builders want to shelter the American people in good quality homes at prices they can afford. They have emphasized the intention again and in a new direction by adopting a plan to encourage local chapters to sponsor small projects of low-cost units. But at the same time, they turned down a proposal to require members to issue a warranty with each house built. Such shyness is puzzling and regrettable.

Warranties could well be a great aid in improving standards for low-cost, as well as high-price homes. It is not difficult to agree with the NAHB's opposition to the compulsory warranty proposed in the Teague bill now being considered by Congress. But if this is unnecessary governmental interference with private business, private business should show a willingness to do the job itself.

Without warranties there is an added danger that the new low-cost houses will turn out to be of poor quality. Then the NAHB's hopes to demonstrate that low-cost private housing is a better investment for the American people than low-rent public housing will come to naught. By making it compulsory for its members to issue a warranty with each house built, the NAHB could stress to the public its determination to provide high-quality housing at reasonable prices—a sign that the public is waiting for. And such determination would unquestionably influence member builders to build the best houses possible—a goal that NAHB seeks.

Engineers on advisory commissions

A THOUGHT-PROVOKING PREDICTION relative to the advisory services of engineers on commissions was made by Morris Llewellyn Cooke, well known consulting engineer, in a talk before the American Association for the Advancement of Science at Philadelphia. "As time goes on," Mr. Cooke prophesied, "there will be fewer and fewer commissions set up to report on matters usually considered as engineering to which only engineers will be appointed. . . . Reciprocally, commissions appointed to consider matters not heretofore considered as lying within the engineering field are likely to have engineers included in their membership."

Coming from a man who has served on many commissions and who is as socially conscious as Mr. Cooke, this viewpoint is not surprising. Yet, Lawrence M. Lawson, the distinguished engineer who heads the American Section of the International Boundary and Water Commission, probably holds the same opinion. He has pointed out that "the flood control problem basically is not so much an engineering as a human problem that grows out of the ever expanding trend for population to crowd into natural flood plains."

In this latter connection it may be noted that many current flood-control projects, if coldly appraised as engineers would appraise them for a banker, would be turned down. On the one hand this points to the desirability of having men "skilled in other disciplines," as Mr. Cooke says, on boards or commissions that shape policy toward flood control. On the other hand, the continued presence of engineers on such boards is necessary so that no decision will be reached without full realization of what the real costs will be and how small will be the cash return to the government.

Today it is more widely realized than ever before that engineering decisions that are reached in an ivory tower may prove to be impracticable, primarily because factors that are outside the field of engineering actually are controlling. By the same token a balancing engineering viewpoint must be given its due weight in order not to lose all practicality and economy.

Minimum speed limits

FROM MOTORISTS who become irate when they must coast along behind the "family car" that is just taking the kids for a ride has frequently come the suggestion that there should be a minimum as well as a maximum speed limit. All these drivers will find comfort in the announcement that the Oklahoma Turnpike Authority plans to set a minimum speed of 40 mph on its highway when it is opened to traffic. Then will come the question as to whether such a law can be enforced.

Proposals to set minimum speeds on main highways find some justification as a safety measure since a slow-moving vehicle causes an abnormal amount of passing and so introduces a traffic hazard. Yet from a law-enforcement angle, the slow car is a more difficult target than one traveling at high speed. A high speed is, in itself, potentially dangerous. A low speed is not.

A slow-moving car may result in the driver of another car making a dangerous passing movement, but it would be difficult for a court to rule that the driver of the slow car was primarily responsible for that. Moreover, a law that would pave the way for a reckless driver to attempt to shift responsibility for his dangerous driving to the driver of the vehicle he was passing could do more harm than good. And what happens when the road is so crowded that all of the vehicles in the slow lane are cut to less than 40-mph speeds? Are all the drivers subject to arrest for violating the law.

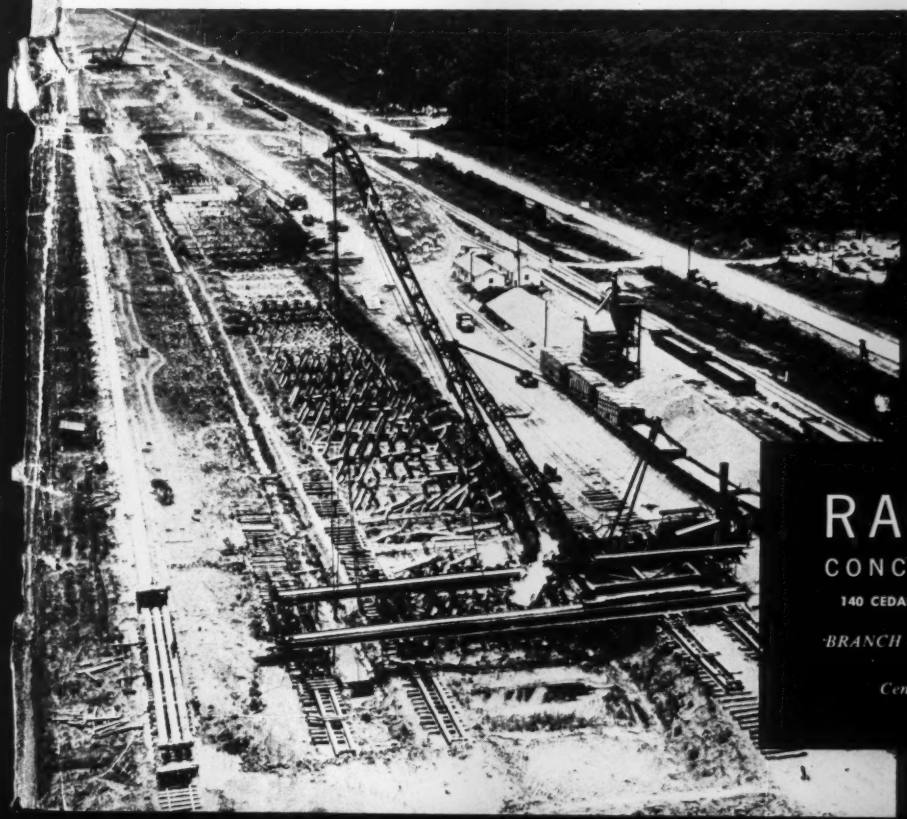
The conclusion would seem to be that controlling slow drivers, when their pace causes impatient drivers of other cars to take unnecessary risks, is a matter to be left to the discretion of a traffic policeman, not one to be approached by means of a speed law.

GIANT MORGANZA FLOOD CONTROL JOB

COMPLETED 3 MONTHS AHEAD OF SCHEDULE!

DRIVING FOUNDATION PILES for the gated portion of Morganza, La., Floodway Control Structure is one of the outstanding pile jobs of the year. Skilled planning of operations and use of two of the largest pile drivers ever built have enabled Raymond to complete this work three months ahead of schedule. Structure is supported on 3,734 precast concrete piles 80 to 118 feet in length—practically all driven on a batter.

Design and Construction under Supervision of
COL. CHARLES E. HOLLE, U.S.A., *District Engineer,*
New Orleans District, Corps of Engineers
Department of the Army.



THE SCOPE OF RAYMOND'S ACTIVITIES . . .

RAYMOND
CONCRETE PILE CO.
140 CEDAR STREET • NEW YORK 6, N. Y.

BRANCH OFFICES in the Principal Cities of United States and Central and South America.

BRODERICK & BASCOM

Yellow Strand®

PREFORMED WIRE ROPE

Have you *calculated* the economy of long-lasting wire rope?

Anyone using wire rope in quantity can't afford to guess whether it's a good buy. Each installation had better prove itself right down to the last decimal. That's how we want you to judge tough, flexible Preformed Yellow Strand. Its economies are the measurable kind: a fast rig-up and break-in . . . accurate control by the operator . . . prolonged service in the face of bending stresses, high speeds and shock loads. Seeing that you get the correct line for top production is the job of our special wire-rope engineers. Tell us now that you'd like to have one call.

Broderick & Bascom Rope Co.
St. Louis 15, Mo.

Branches:
New York, Chicago, Houston, Odessa, Tex., Los Angeles, San Francisco, Portland, Seattle

Factories:
St. Louis, Peoria, Houston, Seattle

Distributors in All Industrial Centers